USDA United States Department of Agriculture
Forest Service
Pacific Northwest Research Station
General Technical Report
PNW-GTR-418
April 1998

Pacific Northwest Ecoclass Codes for Seral and Potential Natural Communities

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January 1998
(last update November 1988)

U.S. Department of Agriculture
Forest Service
Pacific Northwest Research Station
Portland, Oregon
General Technical Report PNW-GTR-418
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In cooperation with:
Pacific Northwest Region

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Abstract

Hall, Frederick C. 1998. Pacific Northwest ecoclass codes for seral and potential natural communities. Gen. Tech. Rep. PNW-GTR-418. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 290 p. In cooperation with: Pacific Northwest Region.

Lists codes for identification of potential natural communities (plant association, habitat types), their seral status, and vegetation structure in and around the Pacific Northwest. Codes are a six-digit alphanumeric system using the first letter of tree species, life-form, seral status, and structure so that most codes can be directly interpreted. Seven appendices list various groupings of codes, a synonymy with plants listing, and a complete list with descriptions of all codes with references to publications.

Keywords: Plant association, seral, structure, potential natural community, Pacific Northwest.

Summary

The primary purpose of this publication is to provide a complete list of codes to identify various vegetation resources in the Pacific Northwest. These codes encompass three parts: potential natural community (PNC), seral status, and vegetation structure.

The PNC codes are alphanumeric and are divided into three parts: series (first two characters), subseries (second two characters for four characters), and plant association (last two characters for a total of six characters). Plant associations are comparable to habitat types, range sites, or PNCs. Seral status and vegetation structure codes are all alpha and must be used in conjunction with a series code. All three types of coding may be used independently or combined.

This book has eight parts. First is a basic discussion of ecological classification criteria used to develop plant associations and the concept behind coding. Seven appendices follow:

1. A cross-reference by several criteria, such as very poor forest sites and professional society cover types.
2. A grouping of plant associations for integrated resource inventory.
3. Assignment of associations to the ecological land classification for the United States and ecoregions.
4. Küchler's potential natural vegetation types with assigned associations.
5. Coding for seral status and vegetation structure.
6. Synonyms between ecoclass codes and those in the PLANTS listing for Oregon and Washington.
7. Pacific Northwest ecoclass codes for seral and potential natural vegetation.

Preface

Ecoclass codes are used for inventory and mapping. They provide a way to identify and define all surface resources on National Forests in the Pacific Northwest Region, USDA Forest Service, according to their potential to grow vegetation or, in some cases, their lack of potential. They also describe the seral status and structure of plant communities.

One important function of these codes is to provide a shorthand name for potential natural communities (PNCs) with their seral status and current structure. The PNCs also are called plant associations, which are the end product of sampling, analysis, and interpretation of plant communities. They represent our best estimate of the natural potential dominance of species, their productivity, and reaction to disturbance. Seral status and vegetation structure define current plant association condition.

Classification of plant associations is a long-term activity in the Region. As a result, ecoclass codes are constantly being assigned to new associations as they are developed. This edition contains 515 new associations and their codes. Codes have been published in six previous editions, each with a different name and date. PLEASE NOTE: The date of the last edition is shown on the title page and in appendix 7. All previous editions may be destroyed because once an ecoclass code is established it will always be retained. All ecoclass codes in the first edition are exactly the same in this edition. If the association assigned to an ecoclass code is changed, a note will appear after the code to indicate the changed code.

Appendices have been added to later editions of ecoclass codes as new uses for inventorying vegetation have evolved.

The new appendix 5 summarizes seral status and vegetation structure codes.

Appendix 6 is a second new appendix. This is a synonym list between ecoclass species codes and the Natural Resource Conservation Service's PLANTS listing.

Other appendices, which have appeared in previous editions, have been updated by adding the 515 new associations.

Contents

Introduction

Ecoclass codes are six-digit acronyms for the name of a potential natural community (PNC); for the seral status of tree, shrub, and herb-cryptogam layers; and for structure of a plant community. They provide a way to identify and define all surface resources on National Forests in the Pacific Northwest according to their potential to grow vegetation, the current status of that vegetation, or the lack of potential to grow vegetation.

Acronyms are commonly used by land managers to label items being mapped or inventoried. Thus, the characteristics of each item can be identified, summarized, and used in land management planning (Helliwell and Rawlings 1994; Simpson and others 1994; USDA Forest Service 1993, 1994).

Current condition of vegetation and its potential (seral status, structure, and PNC) are key factors for appraising wildlife habitat. These can be defined and labeled (Brown 1985, Thomas 1979, Thomas and Maser 1986).

Silvicultural treatment of forest stands requires knowledge of successional processes and the resulting plant community (Means 1982, Murphy 1991) as does management of livestock grazing (Busby and others 1994). Ecoclass codes identify and help define these communities.

Ecoclass codes are equally applicable to simple, nonforest PNCs as to complex, multilayered, and multispecies forest PNCs. For example, codes encompass the variability from single-layer scablands on 4 to 6 inches of soil composed of Sandberg's bluegrass, one-spike oatgrass, and moss (POSA3-DAUN-TORTULA) producing only 150 pounds of biomass per acre per year, to Douglas-fir overstory and tanoak understory trees with salal shrub layer and dogbane herb layer (PSME/LIDE3/GASH/-APAN)—a four-layer PNC producing 5,500 pounds of biomass per acre per year (see app. 7 for acronyms).[1]

Coding is designed to be flexible and to accommodate several levels of precision. For example, PNCs can be identified by just life-form layer (tree, shrub, herb), by the dominant species, and by the entire plant community. Seral status may be coded by the dominant life-form, by all life-form layers, and by either estimation or sophisticated research studies. Structure may be coded by the dominant life-form layer or by all layers. All three types of codes—PNC, seral status, and structure—may be combined with each other or stand alone.

A basic precept is to use codes that can be directly interpreted. They are a combination of plant life-form and species derived from the first letter of common words such as **"C"** for conifer, **"D"** for Douglas-fir, **"S"** for shrub, **"G"** for grass, **"L"** for late seral, or **"MT"** for medium diameter trees (9 to 21 inches in diameter at breast height [d.b.h]).

Brief definitions are presented first, are followed by ecological classification concepts, PNC coding, and end with seral status and structure coding.

[1] Scientific names for all species are given in appendix 6.

Potential Natural Communities

A potential natural community (FSH 2090.11,05 [USDA Forest Service 1991]) is defined as, "the biotic community that would be established if all successional sequences of its ecosystem were completed without additional human-caused disturbance under present environmental conditions. Grazing by native fauna, natural disturbances such as drought, floods, wildfire, insects, and disease, are inherent in the development of potential natural communities which may include naturalized nonnative species." However, PNCs are described **without** disturbance. Their nature and characteristics are discussed in the section, "Ecological Classification of PNCs," below.

Ecoclass codes for identifying PNCs are divided into series (first two digits), subseries (second two digits), associations (last two digits), as described in the section, "Potential Natural Community Coding," and in appendix 7.

Series are coded according to plant life-form such as **"C"** for conifer, **"S"** for shrub, and **"N"** for nonvegetated land. Forested PNCs have species codes added to the life-form code for series. For example, conifer life-form **"C"** adds **"P"** for ponderosa pine, **"D"** for Douglas-fir, and **"F"** for silver or noble fir for series codes of **CP, CD**, and **CF**. Other series codes use a modifier, such as **"G"** for grass modified by **"B"** for bunchgrass and **"S"** for subalpine or alpine grassland. **"S"** for shrub may be modified by **"W"** for wetland shrubs.

Subseries is a refinement of a series. It uses a series code followed by a letter plus a number or a two-digit number. Forested series such as Douglas-fir **(CD)** might have an **"S"** for shrub. A number identifies a group of species with similar ecological characteristics, such as **"S6"** attached to **"CD"**, which means snowberry-spirea species group forming a subseries of **CDS6**, a PNC of Douglas-fir/snowberry. Grass, shrub, and herb series have numbers identifying more precise kinds of PNCs. Coding is discussed in detail under the subseries section heading, and appendix 7 contains all assigned codes for subseries.

Plant associations are the most refined PNC code. They are equivalent to habitat type, range site, and the definition above for PNC. Each is identified by digits 5 and 6, which are numeric; for example, **CDS633** means Douglas-fir/snowberry/pinegrass, a PNC classified by Williams and Lillybridge (1983) in the Okanogan National Forest. Plant association coding is discussed under "Plant Association" sections, below. Appendix 7 contains all current codes.

The PNC coding system is not designed as a hierarchical classification or a plant community taxonomy. It is only a framework for identifying associations. Plant association is the only category that is classified. Similar plant life-forms are grouped together regardless of similarities or differences among the associations they represent.

The **CP** Series identifies conifer forest where ponderosa pine is the PNC dominant. Associations range from open pine/bunchgrass savanna producing only 10 cubic feet of wood and 430 pounds of herbage per acre per year (**CPG111:PIPO/AGSP**) to closed forest ponderosa pine-quaking aspen/bluegrass dry meadow producing 55 cubic feet of wood and 1,200 pounds of herbage a year (**CPH311:PIPO-POTR/-PONE**) (app. 7). These associations fall into two different formations according to Driscoll and others (1984).

Seral Status Codes

Seral status codes are keyed to PNC series (app. 5). They identify current vegetation in one of four successional stages: PNC, late seral, mid seral, or early seral status. Further, each life-form layer in a plant community may be rated for seral status: tree layer, shrub layer, and herbaceous-cryptogam layers. A single seral status code also is provided. All codes are alpha. The order is PNC series, kind of estimate for seral status, and then the seral status of tree, shrub, and herb-cryptogam layers.

Seral status starts with a PNC series code. Then one of three letters identifies how the seral status was determined: **"C"** means it was classified from published research dealing with the plant association being evaluated, **"E"** means seral status was estimated, and **"A"** indicates an altered site where seral status is difficult to determine. Finally, a letter identifies seral status of the tree, shrub, and herb-cryptogam layers. Letters are taken from seral status:**"P"** means PNC status, **"L"** is late seral, **"M"** is mid seral, and **"E"** is early seral. For example, **CDELMP** is series **"CD"** (**"C"** for conifer, **"D"** for Douglas-fir), **"E"** for estimated seral status, **"L"** for late seral tree layer, **"M"** for mid seral shrub layer, and **"P"** for PNC status herb-cryptogam layer. Appendix 5 discusses coding in detail.

Vegetation Structure Codes

Vegetation structure codes also are keyed to PNC series and are discussed in appendix 5. They identify size, canopy cover, and evenness within a layer of current vegetation. Codes are specific for tree, shrub, and herb layers. Size codes are two digits, such as **"ST"** for sapling diameter trees (1 to 4.9 inches d.b.h.), **"MS"** for medium tall shrubs (1.7 to 6.5 feet tall), or **"HE"** for the herbaceous layer, which is not rated for height. Canopy cover is noted as **"O"** for open (<10 percent cover) or **"D"** for dense (>70 percent cover). Evenness within a layer is shown as **"E"** for even heights or **"U"** for uneven heights.

An example of a vegetation structure code is **CDMTMU** with series **"CD"** for Douglas-fir, **"MT"** for medium diameter trees (9 to 21 inches d.b.h.), **"M"** for moderate canopy cover of trees (40 to 69 percent canopy cover), and **"U"** for uneven sized trees. Shrub and herb layers may be added, such as **CDMTMU-MSOE-HEDE** meaning a Douglas-fir PNC in medium diameter trees of moderate canopy cover of uneven heights, a shrub layer of medium tall shrubs (**MS**) of open canopy cover (**O**) and even heights (**E**), and an herb layer (**HE**) of dense cover (**D**) and even heights (**E**). Appendix 5 discusses coding in detail.

Combined Coding

Combined coding for PNC, seral status, and vegetation structure is provided.

In the examples above, **CDS633 ELMP/MTMU-MSOE-HEDE** reads as Douglas-fir/snowberry/pinegrass association estimated to be in late seral tree status, mid seral shrub status, and PNC herb status with medium diameter trees of moderate canopy cover and uneven sizes, shrub layer of medium tall shrubs of open cover and even heights, and an herb-cryptogam layer of dense cover and even heights.

The coding system provides (1) flexibility, because many basic units or associations are not yet known; (2) an open-ended system that can be expanded at any time; (3) computer compatibility that permits aggregating similar classification units to answer questions posed by the land manager; (4) as much direct interpretation ability as possible—i.e., codes that will mean something to the reader; (5) a description of the identified unit; and (6) identification of PNCs and their seral status and vegetation structure.

Ecological Classification of PNCs

Plant community classification in the Pacific Northwest Region follows guidelines established in FSH 2090.11 (USDA Forest Service 1991). It is founded on the concept of PNCs. Plant association is designated as the lowest level of classification for vegetation (see FSH 2090.11, 05, definitions).

Classification uses a "single level" approach that considers several attributes of PNCs. This approach was chosen because plant communities exist only at one level—the ground level. Classification is accomplished without regard for existing hierarchical systems, which have different inherent criteria for grouping associations into higher classes. "Phases" (Daubenmire and Daubenmire 1968) are not used. They are given association status whenever differences in PNCs warrant separation.

Terms Used

The term "habitat type" has been dropped from usage to avoid confusion and misunderstanding. The term originated with Daubenmire (1952) when he changed the term "plant association" to habitat type for mapping purposes and defined habitat type as "the land area capable of supporting the same association." Since then, attributes of habitat types have become confusing and misleading.

First, the concept of habitat type as a "land classification" is unfortunate because "land"—soil and topography—is not part of the classification (Pfister and Arno 1980). The only thing classified is floristic similarity of plant communities, which is properly called plant association.

Second, the term "habitat type" is commonly used by wildlife and fisheries biologists as meaning type of wildlife habitat. In these situations, it means seral status and stand structure rather than PNC.

Potential Natural Community

A PNC is the biotic community that one presumes would be established and maintained over time under present environmental conditions, if all successional sequences were completed without additional human-caused disturbance. Present environmental conditions include current climate, eroded or damaged soils, and natural disturbances in riverine riparian systems.

A damaged soil is expected to produce a PNC different from that on an undamaged soil (Busby and others 1994, Meeker and Merkel 1984).

Current climate may produce a PNC different from historical climate (Cain 1939, Foster and Zebryk 1993, Pielow 1991, Whitlock 1993).

Flooding in riverine systems destroys some PNCs and creates others (Johnson and McCormick 1978, Naiman 1992, Raedeke 1988, Tellman and others 1993).

Grazing by native fauna and natural disturbances such as droughts, floods, wildfires, wind, insects, and disease, are inherent in the *development* of communities.

However, PNCs are described *without* disturbance by natural elements, including fire. The PNCs may include naturalized nonnative species. Thus, a PNC is composed of those species the investigator presumes will be most competitive over time (climax) and that will prevent establishment by less competitive (seral) species under existing site conditions and climate, and without human-caused disturbance. The PNCs also are called plant associations (the term used here), habitat types, and range sites (Allen 1987, Daubenmire 1952, Driscoll and other 1984).

Note the criteria for "present environmental conditions." Damaged or eroded soils have lost their ability to produce the original PNC. This is a major difference between PNC and the classical concept of climax. "Disclimax," "postclimax," and similar terms are not used. A changed soil is considered to have crossed a "threshold" whereby secondary succession back to the historical PNC is no longer possible (Busby and others 1994, Meeker and Merkel 1984). This a termed an "altered PNC." Present environmental condition is of major importance in riverine riparian ecosystems, as described below.

At times, vegetation thresholds are crossed whereby the historical PNC is changed to a new kind of PNC (Busby and others 1994, McArthur and others 1990, Monsen and Kitchen 1994). Severe damage to vegetation without soil degradation can destroy a historical PNC and result in succession to a different PNC; or change in successional processes, such as invasion by highly competitive nonnative species like cheatgrass (BRTE), may alter the historical PNC (McArthur and others 1990, Monsen and Kitchen 1994). This also is called an "altered PNC."

Fire, erosion, introduced plants or animals, and the dynamics of riverine riparian systems all influence classification and characterization of PNCs.

Fire

The historical effects of fire (historical meaning 100 to 300 years before present) are excluded. Classification is based on potential vegetation that would occupy a site in the absence of fire.

This is an important consideration, because some form of crown fire, or underburning, or a combination of the two, was once historically part of the environment. Crown fire, for example, would kill a stand of timber. On the east side of the Cascade Range crest, either lodgepole pine or larch would commonly colonize the burn. After a number of years, Douglas-fir, white fir, or subalpine fir would become established and become dominant as the pioneer trees died. These sites are classified as "fir potential." West of the Cascade crest, Douglas-fir was the common pioneer species, and it would eventually be replaced by western hemlock or silver fir. These sites are classified as "hemlock or fir potential."

A much more subtle, but equally important, relation occurs with underburning. In many cases, ponderosa pine historically was maintained by light, periodic lightning-ignited underburns every 8 to 25 years. With fire suppression, Douglas-fir, white fir, and sometimes incense-cedars colonize the sites, often becoming dominant over pine. These sites are classified as "fir or cedar potential."

A somewhat different situation occurs at the transition from forest to steppe vegetation. Under historical conditions, fire prevented ponderosa pine, juniper, or sagebrush from colonizing grassland. Where pines, juniper, and sagebrush are suited to the site, it is classified as "pine, juniper, or sagebrush potential."

Erosion

Erosion or soil damage may create sites with a PNC different from that of undisturbed sites. This is termed an "altered site" and thus an altered PNC. It means a threshold has been crossed whereby the historical PNC no longer exists (Busby and others 1994). Plowing in Oregon's Crooked River National Grassland destroyed the top soil horizon and resulted in a 2- to 4-inch soil loss during the drought of the 1930s. These sites no longer have a potential for juniper/sagebrush/bluebunch wheatgrass. Instead, the new potential seems to be juniper/rabbitbrush/crested wheatgrass.

Eroded soil conditions (altered sites) pose problems in classifying PNCs because too little time has elapsed for the vegetation to develop into the new full natural potential. In these cases, all one can do is provide a "best estimate." For example, when subalpine elk sedge (GS3911:CAGE- ALPINE) is eroded, the dark "A" horizon is removed, leaving a gravel-covered "B" horizon dominated by Douglas' knotweed. The new PNC is called FS5911:POPH-ALPINE. Dredge tailings and mining spoils pose similar problems.

Introduced Plants and Animals

Introduced plant and animal species are considered a part of potential natural flora and fauna when their competitive ability allows them to persist in stable plant communities (McArthur and others 1990, Monsen and Kitchen 1994). Examples in the Pacific Northwest include cheatgrass, Kentucky bluegrass, crested wheatgrass, chukar partridge, and Rocky Mountain elk.

Riverine Riparian Environments

Riverine riparian environments differ from terrestrial ecosystems in three important ways: (1) yearly fluctuations in water level, (2) occurrence of floods, and (3) effects of beavers on water dynamics. These differences require more flexible approaches to classifying riparian PNCs compared to terrestrial PNCs. Several questions might be asked: (1) What is a riverine riparian site? (2) How stable can a riverine site be? (3) How long a time is required for it to be "maintained over time?" (4) What is a "natural disturbance?" (5) What are considered "present environmental conditions?" Several symposia and publications deal with these concepts and questions (Clary and others 1992, Johnson and McCormick 1978, Naiman 1992, Raedeke 1988, Tellman and others 1993).

Yearly fluctuations in stream flow—highs and lows—impact soil water levels in adjacent soils, thereby affecting the kind of plant community capable of persistence. Riverine systems with minimum fluctuations, such as a 3-to-1 ratio of high to low flow, often have different plant communities from those with greater fluctuations such as a 6-to-1 ratio in-stream flow. Classification of PNCs must consider what is significantly different (Clary and others 1992, Crowe and Clausinitzer 1996, Diaz and Mellen 1996, Kovalchik 1987, Manning and Padgett 1995, Padgett and others 1989, Youngblood and others 1985).

Flooding is a major factor in riverine systems, often the driving force behind change in stream channel, physical disturbance of vegetation, alteration of stream banks, and change in a site. Site changes may be deposition of silt on a flood plain or destruction of a plant community and its soil. In either case, a new site is created with a new PNC (Paulson and others 1991). Flooding severity often is characterized by occurrence: 10-year severity, 25-year, 50-year, and the most severe as a 100-year flood (Dunne and Leopold 1978).

Floods have different characteristics and thus different effects on the riverine ecosystem. They may occur as a spring flood, a winter flood caused by warm rain on snow or an intense summer thunderstorm. The combination of severity and flood characteristic tends to shorten the time for a plant community to be "maintained" and to define a riparian PNC.

Beavers, when building dams, dramatically change stream edge-terrestrial site characteristics as well as significantly altering soil water properties (Johnson and McCormick 1978, Johnson and others 1985, Raedeke 1988). The presence or absence of beavers can create different PNCs on the same soil material.

Because riverine riparian systems tend to have very different environments from terrestrial, many investigators use the term "plant community type" instead of "plant association" when referring to riverine PNCs (Clary and others 1992, Crowe and Clausinitzer 1996, Diaz and Mellen 1996, Kovalchik 1987, Manning and Padgett 1995, Padgett and others 1989, Youngblood and others 1985).

One last factor must be considered in classifying riverine riparian PNCs. "Wetland," as defined by Lyon (1993) is not required. The only requirement is a river-terrestrial interface. Many of the plant associations added to ecoclass in this edition are not delineated wetlands (Lyons 1993).

Appendix 1 has a section in which riverine riparian PNC codes are grouped together.

Classification Criteria

Four criteria are generally used in classification: (1) floristic similarity, (2) productivity, (3) plant community response to management, and (4) identifiable when disturbed. Classification often proceeds in that sequence.

Floristic similarity—Plant communities are grouped into tentative associations by similarities in species dominance and use of selected indicator species as described by Daubenmire (1952). This floristic classification is considered the first approximation.

Productivity—Productivity estimates are made for each tentative association. Estimates are derived from intensive sample plot data. Herbage production is estimated for forest and nonforest associations. In forest associations, additional productivity estimates include site index, growth basal area, cubic volume growth indexes by species (Hall 1983, 1987), stand density index, total basal area, and stand density index cubic volume production for stands. Productivity estimates by species show which species grow best in an association.

Productivity is used to validate the concept that an association indicates a set of specific environmental conditions. Productivity is considered just as "natural" as species dominance because it is influenced by environmental factors (Wykoff and others 1982). Productivity is measured on the same tract of ground as vegetation so it is influenced by the same environment. Thus, it is an "independent validation" that proper species were selected to characterize an association.

If the 95-percent confidence interval of the various productivity estimates do not exceed ± 20 percent of the mean, the tentative association has been validated for a second approximation. Tentative associations do not meet this criterion 30 to 40 percent of the time, so new associations must be formed that have less variability in production. Reevaluation tests the theory that suitable indicator species were selected by which the tentative association was classified. This test produces a second approximation.

Response to management—The "second approximation" associations are next evaluated for their vegetative response to management activities: logging; reforestation; revegetation; burning; and, where appropriate, livestock grazing.

The first question to ask is whether stands that make up an association would all respond similarly to treatment. If they would not, then new associations might be considered, as discussed by Arno and others (1985). The second question to ask is whether plant community response to treatment is significantly different between closely related associations: Should they be split or lumped?

In some cases, management must deal with livestock impacts on vegetation. These impacts are assessed by use of livestock forage rating guides. Plant associations form the foundation on which forage rating guides are based.

Livestock tend to graze some plant species more heavily than others. With overgrazing, three changes in plant density and composition take place: (1) preferred species decrease (these are called decreasers); (2) less palatable species increase (these are called palatable increasers) until continued heavy use causes them to decrease; and (3) unpalatable species increase (these are called unpalatable increasers). With serious depletion of the plant community, "invaders" colonize the site.

Livestock forage rating guides estimate how much depletion has occurred by placing current vegetation into one of four classes according to its similarity to PNC: high (high similarity)—75 to 100 percent of PNC species density and composition; moderately high—50 to 74 percent of PNC; moderately low—25 to 49 percent of PNC; and low (low similarity)—less than 24 percent of PNC (USDA Forest Service 1992:2.3). Low similarity is also defined as not enough decreasers to permit an upward range trend back to PNC with adjustment in livestock management; which means a vegetation threshold has been crossed (Busby and others 1994). These four classes also have been called good, fair, poor, and very poor range conditions. They are equivalent to seral status of PNC, late, mid, and early.

Four classes pose restrictions on density and composition of species when classifying associations. The high PNC class covers a confidence interval of 25 percent (75 to 100 percent). Thus, plant associations, if they are the basis for livestock forage rating guides, can range no more than ±12.5 percent around the mean for species density and composition. This precision level is difficult to attain and meet the requirement for identification of the association in the field in any stage of disturbance, particularly in the moderately low and low classes.

Composition and density of decreasers, which may be two or sometimes three species, therefore are often used as a criteria for establishing associations and livestock forage rating guides. The "third approximation" occurs after this step.

Identifiable when disturbed—"Third approximation" associations are tested to see if they can be identified by means of a written key in nearly any stage of disturbance, particularly in the moderately low and low forage rating. Key indicator species generally cannot be limited to decreasers and seldom to palatable increasers. At times, the key to identifying associations will have to include "invaders"—species that inhabit sites that have been burned, clearcut, or very heavily grazed—together with soil and topographic criteria.

This four-step approach ensures that criteria for classification include a number of natural biological attributes and that an association reflects a certain limited range of species dominance, productivity, and response to treatment.

Single-Level Classification

Using four kinds of criteria for classifying associations suggests a single-level approach. This seems appropriate because plant communities occur at only one level—the ground level. Classifying associations by an established hierarchy is difficult because only one of the criteria can be used for agglomeration; i.e., similarity in species dominance, similarity in productivity, or similarity in reaction to treatment.

The concept used, an agglomerative, reticulate classification, provides maximum flexibility for answering land management questions. Associations can be grouped (agglomerated) into different kinds of classes (reticulate or network) to meet management needs. For example, those producing less than 20 cubic feet per acre per year of wood vs. those producing 20 to 50 cubic feet; those with climax ponderosa pine vs. those with successional ponderosa pine; or those formerly disturbed by natural underburning vs. those disturbed by crown fire.

Various agglomerations of PNC codes are contained in appendices 1, 2, and 3. Appendix 1 groups codes according to wetlands, riverine riparian systems, extremely poor sites, low productivity forest sites, coastal sand dunes, alpine and subalpine, standard range types, SAF cover types, Küchler's potential natural vegetation (1964, 1970), and three wildlife habitat cross-references. Appendix 2 groups associations into a stratification used for vegetation resource inventory. Appendix 3 groups associations according to Driscoll and others (1984) and into ecoregions (Bailey 1980).

Resource Information

Associations do not indicate the sum of the environment. They are not a land classification. And they do not answer all land management questions. A land manager needs six kinds of resource information to make a sound decision concerning such things as treatment of vegetation, harvesting trees, grazing livestock, evaluating wildlife habitat, and planning recreational use.

1. Timber stand condition showing size and volume by species or rangeland condition with species dominance and forage production. Codes for seral status and vegetation structure identify these conditions.
2. Soil stability, resistance to compaction, erodability, moisture-holding capacity, and fertility. Soils often limit management opportunities.
3. Landform of the area—steepness, shape, and length of the slope; aspect, geologic stability, and nature of the ridge or bottom, if present. Landform commonly limits treatment opportunities.
4. Size of the tract; its location with respect to roads, fences, water, and other vegetation types; and its proximity to rivers, ridgetops, and other management-influencing features.
5. Current uses of the area, including primary livestock range, timber, critical wildlife, foreground landscape, riparian reserve, late successional reserve, campgrounds, and botanical areas.
6. Potential of the site (series, subseries, and plant association) with regard to productivity, response to treatment, and opportunities or limitations on management. Plant associations provide predictability for choosing management options.

Ecoclass codes are designed for compatibility with all vegetative resource inventories and Geographic Information Systems (GIS). Codes are located in an ecoclass field for each record or pixel layer. Each pixel or record can identify elevation, steepness of a slope, type of soil, data on present stand condition, and past management activities.

Thus, if long-range planners wish to know how much land might be suitable for sophisticated logging systems, they can request printouts or maps with slopes more than 80 percent that support any coniferous series except juniper (CJ) and alpine forest parks (CA), which do not have enough timber productivity to warrant expensive logging techniques.

Potential Natural Community Coding

The PNC codes are composed of three parts: series, subseries, and association (app. 7):

Series	Subseries	Association
CD	S6	33

The series is composed of two parts. The first character is an alpha code taken from the first letter of a word describing a plant life-form or other feature, such as "**C**" for conifer, "**H**" for hardwood, "**G**" for grass, or "**N**" for nonvegetated (areas with less than 10 percent potential natural plant cover). The second character is also alpha and modifies the first. For example, "**C**" for conifer is modified by "**P**" for ponderosa pine (**CP**) or "**D**" for Douglas-fir (**CD**); see "Series Codes," below, and appendix 7.

The subseries always must be preceded by a series code. Subseries may be alpha-numeric or numeric. Alpha codes take the first letter of a word describing a plant life-form, and numeric codes are keyed to a group of plant species of similar ecological amplitude. For example, S6 is derived from "**S**" for shrub under a forest community and "**6**" for the "spirea-snowberry-bearberry" species group in the Douglas-fir series (CDS6). A "**20**" when attached to "**SD**" (shrub, dry) means the "big sagebrush" species group (**SD20**); see "subseries Codes," below, and appendix 7.

Association codes are always numeric. For the example shown above, CDS633 is the Douglas-fir/snowberry/pinegrass association; (see "Plant Assocation," below, and appendix 7.

Concept of PNC Codes

New ecoclass codes are assigned only by the Pacific Northwest Regional Office.

A key for identifying series and subseries is not provided. Keys to identify associations are contained in the publications cited for each PNC code (app. 7).

The PNC codes provide not only a uniform means for identifying PNC but also permit additional information as new data are obtained. For example, present timber maps or aerial photographs indicate that an area in the H.J. Andrews Experimental Forest is dominated by Douglas-fir with moderately abundant western hemlock understory. The area is mapped and coded as series CH: "**C**" for conifer and "**H**" for western hemlock, because the latter are more shade-tolerant and will eventually replace Douglas-fir as the potential natural dominant.

Let us assume later field inspection revealed that shrubs are dominated by rhododendron with some vine maple and salal. This is subseries code S3: "**S**" for shrub and "**3**" for the third group of shrubs—so **S3** is added to **CH**, forming **CHS3** as a PNC code.

Finally, research is published describing 18 associations in the H.J. Andrews Experimental Forest. Four could have the combination of western hemlock and rhododendron (Dyrness and others 1974). Other ground vegetation species are used to identify the association. Salal suggests the mapping unit is the western hemlock/rhododendron/salal association, so **51** is added to **CHS3**. The final and most precise PNC code is **CHS351:TSHE/RHMA/GASH** (app. 7).

The PNC coding is based on an open-ended system. In the series code, additional dominant species can be added to the present 67, and room is provided for adding subseries codes to the present 560. Each subseries can have up to 100 associations (a total of 56,000 associations), of which 1,600 have been classified (as of May 1997).

In addition, coding provides for situations where vegetation may not be adequate for identifying the biotic community. One series is devoted to administrative items, such as roads, campgrounds, residences, and agricultural areas. Another series is devoted to nonvegetated areas, such as snow fields, rock outcrops, and sand dunes. A third deals with aquatic systems.

Coding is provided at the subseries level for special grouping. These groups are identified by the letters X, Y, and Z. The kinds of vegetation contained in each "**X**" code are noted in the description of the code (app. 7). For example, **CLX220** is a special grouping used by the Winema National Forest. It is dominated by lodgepole pine and contains associations **CLG311**, **CLM111**, and **CLS214**. It is read as lodgepole pine series (**CL**), special map unit number 2 (**X2**) for the Winema National Forest (**20** is the number for the Winema Forest). The group represents the most productive lodgepole pine sites in the Forest.

The PNC codes are stored in computer memory at many locations. Error statements will be made unless the following rules are followed:

1. Always use both characters when using the series from appendix 7.

2. Always use all four characters when using subseries from appendix 7.

3. Always use codes that are in appendix 7.

Series Codes[2]

The first letter in a code represents a kind of life-form or, when vegetation is not the primary feature, the dominant identifying character such as nonvegetated or water. A second letter describes the first by additional information. An "**X**" following the first letter indicates that additional description has not been made.

Administrative or agricultural areas—

AX = administrative or agricultural (no descriptor specified)

AB = buildings, structures, roads, campgrounds

AC = cultivated lands

AG = grassland; permanent pasture that is maintained in forest, shrub, or desert climates

AO = orchards; maintained exotic forest stands

AR = recreation areas; parks, golf courses, or play areas

Coniferous forest areas—

CX = coniferous forest (no descriptor specified)

CA = alpine, open forest park of subalpine fir, whitebark pine, mountain hemlock, alpine larch; potential less than 40 percent tree cover

CC = cedar, western redcedar, as the PNC dominant; may occur as dominant reproduction under Douglas-fir

[2] Appendix 7 is a complete list of codes.

CD = Douglas-fir as the PNC dominant; may occur as dominant reproduction under itself, ponderosa pine, white pine, or larch; do not use when reproduction under Douglas-fir is shade-tolerant fir or hemlock—instead, use CF, CH, CM, CR, CS, or CW

CE = subalpine fir-Engelmann spruce closed forest of commercial density (potential tree cover 40 percent or greater); not alpine parks; larch or white pine may dominate the overstory; lodgepole may be an important component of the overstory but fir or spruces, or both, clearly dominate the understory

CF = fir, silver or noble, as the PNC dominant; may occur as dominant reproduction under western hemlock, Douglas-fir, white pine, lodgepole pine; mid to upper forest zone conditions

CH = hemlock, western hemlock, as the PNC dominant; stands currently may be dominated by Douglas-fir with hemlock reproduction; Sitka spruce must be absent in the overstory and absent to minor in the understory; if spruce is common to dominant in the understory, use CS

CJ = juniper-dominated stands with little or no ponderosa pine

CL = lodgepole pine-dominated stands; lodgepole may be PNC or persistent; must compose 100 percent of the overstory and have minimal reproduction of other species; shore pine-dominated stands

CM = mountain hemlock as the dominant PNC species; hemlock may occur as reproduction under noble fir, Douglas-fir, white pine, sugar pine, lodgepole pine, and sometimes under silver or Shasta red fir; upper forest zone conditions where potential tree cover is 40 percent or greater.

CP = ponderosa pine or Jeffrey pine as PNC dominant; when regeneration is dominated by firs, use CD or CW; when mixed with juniper, identify the series by the species of dominant crown cover at maturity (either CP or CJ)

CR = red fir, Shasta red fir, as the PNC dominant; stands currently may be dominated by sugar pine, lodgepole pine, or Douglas-fir, but red fir dominates regeneration; upper forest conditions

CS = Sitka spruce as the PNC dominant; coastal forest conditions; spruce must dominate reproduction (if any) or the overstory, or both; overstory may be dominated by Douglas-fir or hemlock

CW = white or grand fir as PNC dominant; fir must dominate reproduction under ponderosa pine, Jeffrey pine, Douglas-fir, larch, white pine, sugar pine, clearly replacing lodgepole pine

Forb-dominated areas—

FX = forbland (no descriptor specified)

FM = moist (mesic) forblands within the forest zone

FS = subalpine or alpine forbland; sometimes eroded sites dominated by forbs

FW = wet forblands, forb-dominated meadows; freely available water within the rooting zone throughout the growing season

Grassland—This is not successional or fire-induced grassland on sagebrush or juniper sites.

GX = PNC grassland (no descriptor specified)

GA = annual grassland sites; may have been perennial grass at one time but currently in near-stable annual grassland (i.e., California annual grasslands)

GB = bunchgrass-type grasslands, forest zone, or steppe vegetation; includes seeded bunchgrass vegetation as "new" PNC

GM = moist (mesic) forest zone grassland; interior valley grassland

GR = rhizomatous grass or sedge vegetation

GS = subalpine or alpine grassland dominated by bunchgrasses, sedges, or other grasses

Hardwood—This is broad-leaved woodland or forest with trees taller than 16 feet at maturity and potential tree cover greater than 10 percent at maturity.

HX = hardwood woodland or forest (no descriptor specified)

HA = red alder-dominated stands; PNC apparently stable with little fir or hemlock reproduction (shrub alder less than 16 feet tall in shrub life-form)

HB = bigleaf maple-dominated stands; PNC apparently stable

HC = cottonwood, ash; bottomland, overflow bottomland

HL = liveoak, canyon, as a tree-sized stand (over 16 feet tall); live oak as a shrub field is coded in chaparral, use SC

HO = Oregon white oak; California black oak as PNC dominant or stable woodland dominant

HQ = quaking aspen PNC stands; generally meadow vegetation in the Pacific Northwest Region

HT = tanoak as a tree-sized stand (over 16 feet tall); tanoak as a shrub is coded in chaparral, use SC30

Meadows—Meadows are dominated by grass/sedge; water table available all or part of the growing season.

MX = meadow; grass/sedge (no descriptor specified)

MD = dry meadow; water table available only part of the growing season

MM = moist meadow; water table available to roots throughout growing season

MS = subalpine or alpine; moist to wet meadows as defined above

MT = tulle meadows; standing water during most or all of growing season

MW = wet meadow; soil surface moist to wet throughout growing season

Nonvegetated—Nonvegetated includes minimally vegetated land areas (site potential supports less than 10 percent plant crown cover).

NX = nonvegetated land; less than 10 percent crown cover potential (no descriptor specified)

NC = cinders, lava flow, mud flow, glacial wash; continuous disturbance or low site potential precludes vegetation reaching over 10 percent crown cover

NF = flood plain periodically denuded of vegetation with no foreseeable means of establishing plants

NI = ice fields, glaciers, perennial snow

NL = landform failure, natural slumps, avalanches, avalanche trails with little practical means of establishing vegetative cover

NM = mine tailings, dredgings; human-caused disturbance, which has little current vegetation potential

NR = rocky lands with too little soil (or no soil) for good vegetative cover

NS = sand with minimal vegetative cover; shoreline or interior dunes

NT = talus with minimal vegetative potential

Shrubland areas—This includes areas with PNC shrubs or apparently stable shrub dominance with less than 10 percent crown cover, with potential for 10 percent shrub crown cover or greater at maturity, and trees less that 16 feet tall at maturity.

SX = PNC shrubland (no descriptor specified)

SC = chaparral; evergreen shrubland within the forest and below the forest zone

SD = dry shrubland, sagebrush types, nonforest zone shrubs; not desert

SM = moist (mesic) shrubland; forest zone shrubs and shrubland

SS = subalpine or alpine shrubland; heather, heath

SW = wet shrubland, shrub meadows; willow, alder.

Tundra—Tundra has little representation in the Pacific Northwest. It is located primarily in alpine areas in the north Cascades.

TX = tundra (no descriptor specified)

Water-covered areas—

WX = water-covered areas (no descriptor specified)

WE = estuary systems, interface between fresh and saline water; includes tidal-exposed areas

WL = lakes, ponds, impoundments; perennial or intermittent

WO = oceans, seas, saline water bodies of large size; salinity of lakes and ponds is treated in WL

WR = running water bodies, streams, rivers, creeks, ditches; perennial or intermittent

Subseries Codes[3]

Subseries codes identify groups of species that modify information indexed by series. Therefore, all four characters must be used. Alphanumeric codes are used with administrative, coniferous, hardwood, and nonvegetated series codes. Numeric codes are used with all other series.

Subseries codes are divided into a general group (first digit) and a subdivision of the group (second digit). This stratification accomplishes two things: it permits division of life-form into smaller units based on existing data even though a detailed ecological study has not been published and it permits an additional level for grouping.

Several special designators are used with subseries codes. A first character of X, Y, or Z indicates that a special kind of criterion has been established. These are characterized by Forest and by material contained in the designation. For example, in appendix 7, **CWX120** is identified as **"C"** conifer, **"W"** white or grand fir, map unit **X1** (used by the Winema National Forest [**20**]), and composed of associations **CWS112, CWS114.** This means it applies to the Winema National Forest and is composed of associations **CWS112: ABCO/CEVE-ARPA-PUM** (white fir/ceanothus-manzanita, pumice) and **CWS114: ABCO/CEVE-PUM** (mixed conifer/ceanothus, pumice).

A first-character **"9"** in a subseries means scabland or very restricted site conditions. A second character of **"O"** means a general category, such as SO = general shrub understory or **GO** = general grass understory.

A first-character of **"B"** in a subseries indicates a bisected, broken, or biscuit-swale microtopographic situation that is too small to map or inventory by the individual parts. Biscuit-swale types typically occur as small mounds of good soil 1 to 3 feet high and 5 to 20 feet in diameter separated by areas of very shallow soil that range from 2 to 30 feet wide. The **"B"** also indicates potholes of dry/moist/wet meadow or other microsite conditions.

First character—Alpha codes for the first character of a subseries (app. 7).

A = alpine/subalpine conditions; used with nonvegetated types

B = bisected, biscuit-swale, or complex microsites; used with grass, shrub, and meadow life-forms

C = conifer-dominated vegetation; used with coniferous or hardwood life-form codes, it indicates an important codominant associated conifer or an important short-tree conifer understory; with nonvegetated life-form codes it indicates scattered coniferous species

F = forb-dominated vegetation; ground vegetation under conifers or hardwood; scattered forbs in nonvegetated life-form codes

G = grass and grasslike (sedge)-dominated vegetation; ground vegetation under conifers and hardwood; scattered grass in nonvegetated life-form codes

H = hardwood dominated vegetation; with conifers or hardwood life-form codes it indicates an important associated overstory hardwood or an important short-tree hardwood understory; scattered hardwoods in nonvegetated life-form codes

[3] Appendix 7 is a complete list of codes.

M = meadow vegetation; sites where plants are subirrigated part or all of the growing season, used with conifers and hardwood forest

N = no vegetation; shifting sand dunes, bare rock areas

L = ledge or cliff, steeper than 200 percent (60°)

T = tunnel or cave

D = dump for trash, garbage

P = parking area, open storage area, and large paved areas

R = road or improved vehicle travel route

S = shrub-dominated vegetation; ground vegetation under conifers or hardwood; scattered shrubs in nonvegetated life-form codes

X, Y, Z = special kinds of ecological units (app. 7)

Examples—

HOG2 = hardwood, Oregon oak or black oak, grass ground vegetation, grass code no. 2: rhizomatous grasses (HOG0 = oak/grass general group)

HOS1 = hardwood, Oregon oak or black oak, shrub ground vegetation, shrub code no. 1: Oregon oak/poison oak (HOS0 = oak/shrub general group)

CPG2 = conifer, ponderosa or Jeffrey pine, grass ground vegetation, grass code no. 2: ponderosa pine/pinegrass (CPG0 = pine/grass group)

CPG6 = conifer, ponderosa or Jeffrey pine, grass ground vegetation, grass code no. 6: Jeffrey pine/bunchgrass on serpentine/gabbro

CPS1 = conifer, ponderosa or Jeffrey pine, shrub ground vegetation, shrub code no. 1: pine/sagebrush (CPS0 = pine/shrub group)

ABA2 = administrative, buildings, structures, roads, code A2: A = aircraft facilities, 2 = runway or landing strip

Nonvegetated—These are areas with little or no vegetation (10 percent or less potential plant crown cover). They are either too disturbed to support natural vegetation or so geologically young that soil development has been insufficient to support significant vegetation. Examples are (app. 7):

NRN0 = nonvegetated, rock, no vegetation

NRA2 = nonvegetated, rock, alpine code no. 2: grass/sedge scattered among rocks

Note: **"H"** for hardwood and **"C"** for conifer vegetation when used with the nonvegetated life-form code indicates productivity of less than 20 cubic feet per acre per year and less than 10 percent tree crown cover at maturity

Numeric subseries code examples—

GB10 = grass, bunchgrass vegetation, code no. 10: threeawn-sand dropseed general group

MM10 = meadow moist, code no. 10: tufted hairgrass moist meadow

FS50 = forbland, subalpine, code no. 50: fleeceflower

GB90 = grassland, bunchgrass, code no. 90: general bunchgrass/scabland group

GBB0 = grassland, bunchgrass, code no. B0: biscuit-swale topography general group

SD90 = shrubland, dry, code no. 90: general shrubby scabland

SM10 = shrubland, moist, code no. 10: ninebark shrubland

DC20 = desert, cold, code no. 20: shadscale

Subseries alpha second-character codes—At times, associations may be grouped together for specific purposes. One purpose is vegetation resource inventory, a broad-based expansion of timber inventory (app. 2). In some cases, a specific kind of species, as described above, is not a satisfactory code. Instead, the last character represents an environmental characteristic or vegetation life-form. These last letters are:

C = cool

D = dry

F = forb

G = grass

H = hot

M = mesic

S = shrub

W = wet

X = no additional modifier

Examples (see app. 2 for a complete list) are:

CWSM = conifer, white or grand fir, shrubs, mesic

CHSC = conifer, western hemlock, shrubs, cool

CHSD = conifer, western hemlock, shrubs, dry

CHSF = conifer, western hemlock, shrubs, and forbs

GBFX = grassland, bunchgrasses with forbs

Plant Association

Plant associations are established, described, classified, characterized, and named following formal field investigation and office analysis as discussed under "Ecological Classification." They are identified in PNC codes as a two-digit number following the four-character subseries (see app. 7).

Naming plant associations—A plant association is named by using a dominant or indicator plant species, which sometimes is supplemented with a site or geographical modifier. The name is composed of three parts: (1) species codes, (2) genus and species, and (3) common names of the species. Species codes are derived from the first two letters of the genus and first two letters of the species. For example, quaking

aspen, or *Populus tremuloides,* is coded **POTR**. When several species have the same code, a number is added to the four letters: **POTR** is *Populus tremuloides*, **POTR2** is *Populus trichocarpa* (black cottonwood), and **POTR3** is *Poa trivialis* (roughstalk bluegrass).

The PNC codes are assigned to a plant association name; for example, **CWS211** is the code for ABGR/VAME or *Abies grandis/Vaccinium membranacium*, grand fir/big huckleberry of the Wallowa Mountains area. When an association with the same name but with different characteristics occurs in another area, a geographic identifier is added; i.e., **CWS212: ABGR/VAME-BLUE** for the Blue Mountains and **CWS213: ABGR/VAME-WSPR** for the Warm Springs Indian Reservation (app. 7).

Synonymy with the national PLANTS listing—Species codes used in naming plant associations and contained in this publication were derived from taxonomic sources limited to the Pacific Northwest. The U.S. Department of Agriculture, in conjunction with the U.S. Department of the Interior, has established a national listing of plant species with their codes, the PLANTS listing (USDA Soil Conservation Service 1994b, 1994c; now called the Natural Resources Conservation Service). Appendix 6 lists ecoclass species codes with their synonyms from the PLANTS listing.

Plant association precision—The term "plant association" is applied to basic plant community classification types. These types have been given numerous other names including habitat type, phase, community type, site type, or range site. When the precision of these classification units is compared, the most general would be habitat type, followed by phase, plant community type, and site type as the most precise.

A plant association, therefore, does not indicate a consistent level of data accuracy or interpretive sophistication. In fact, we should expect a continuing increase in accuracy of already established associations. For example, **CPG111** is ponderosa pine/-wheatgrass (PIPO/AGSP) of the Blue Mountains (Hall 1973). As additional data become available, this association could be divided into: (1) ponderosa/wheatgrass/-Sandberg's bluegrass (**CPG111**); (2) ponderosa/sagebrush/wheatgrass (**CPS131**); (3) ponderosa/bitterbrush/wheatgrass (**CPS231**); and (4) ponderosa/sagebrush/-needlegrass (**CPS132**).

Wherever possible, the two-digit association code is divided into a primary "family" of associations (first digit) and a specific kind of association (second digit). For example, estuarial systems developed in sand dune geology are divided into several kinds: **WE1310** = water, estuaries, where 1 = bar formation, 3 = conditions where fresh and saline water are well mixed, and 10 = general category for tidal exposed sandy bottom. **WE1311** means tidal-exposed sandy bottom and an active flood plain (app. 7). Other general kinds of associations are **WE1320** = estuary, bar-built, well-mixed saline, tidal-exposed clay bottom, and **WE1330** = estuary, bar-built, well-mixed saline, tidal-exposed stony bottom.

All association codes are identified in one of two ways: either by citing the published reference or by naming the National Forest for inservice publication. Published references are listed with their abbreviations in app. 7.

Examples—

CAG111 coniferous vegetation; alpine conditions of subalpine fir, whitebark pine, mountain hemlock open parks; grass species group code 1 (sedge-dominated vegetation); association 11: subalpine fir-white-bark pine/sedge in the Blue Mountains, described in the publication R6 Area Guide 3-1 (Hall 1973); coded as:

CAG111 ABLA-PIAL/CAGE: subalpine fir-whitebark pine/elk sedge, R6 AG 3-1.

GB4913 grass vegetation; bunchgrass type; species group code 49 (wheatgrass-dominated vegetation); association 13: bunchgrass growing on shallow soil (8 to 14 inches deep) on steep slopes (more than 25 percent) in the Blue Mountains, described in the publication R6 Area Guide 3-1 (Hall 1973), coded as:

GB4913 AGSP/POSA3-SHAL/STP: bunchgrass, shallow soil, steep, R6 AG 3-1

GR8212 grass vegetation; rhizomatous grass or sedge; species group code 82 (80 is beachgrass general group, so any 80 series is related to beachgrass—82 is beachgrass growing on hummocks on the land side of coastal foredunes); association 12: occasionally wet hummocks that are unstable owing to partial cover of beachgrass which also have coastal lupine growing with it, along the Oregon coast, described in inservice material from the Siuslaw National Forest; coded as:

GR8212 HUMMOCKS, OCC. WET, UNSTABLE: open beachgrass/lupine, Sius.

NCS111 nonvegetated or minimally vegetated areas with less than 10 percent plant crown cover potential; cinder, lava flow, or glacial wash; shrub group code S1, shrubs dominating what little vegetation is present, 1 is vine maple as dominant shrub; association 11: lava flows with vine maple and lace lipfern colonizing occasional soil pockets, in the Willamette National Forest, described in the plant association guide R6 ECOL 257-86 and coded as:

NCS111 SHRUB- (LAVA): Lava flows, scattered vine maple, R6 E 257-86.

SD3311 shrub vegetation; dry shrubland dominated by species not restricted to the forest zone; species group code 33 (30 is the general category of bitterbrush shrubland, 33 is bitterbrush on coarse-textured, easily eroded pumice); association 11: bitterbrush/ needlegrass on pumice soils in the Deschutes-Winema-Fremont area, described in the plant association guide R6 Ecol 104-85; coded as:

SD3311 PUTR/STOC-PUM: bitterbrush/ needlegrass-pumice, R6 E 104-85.

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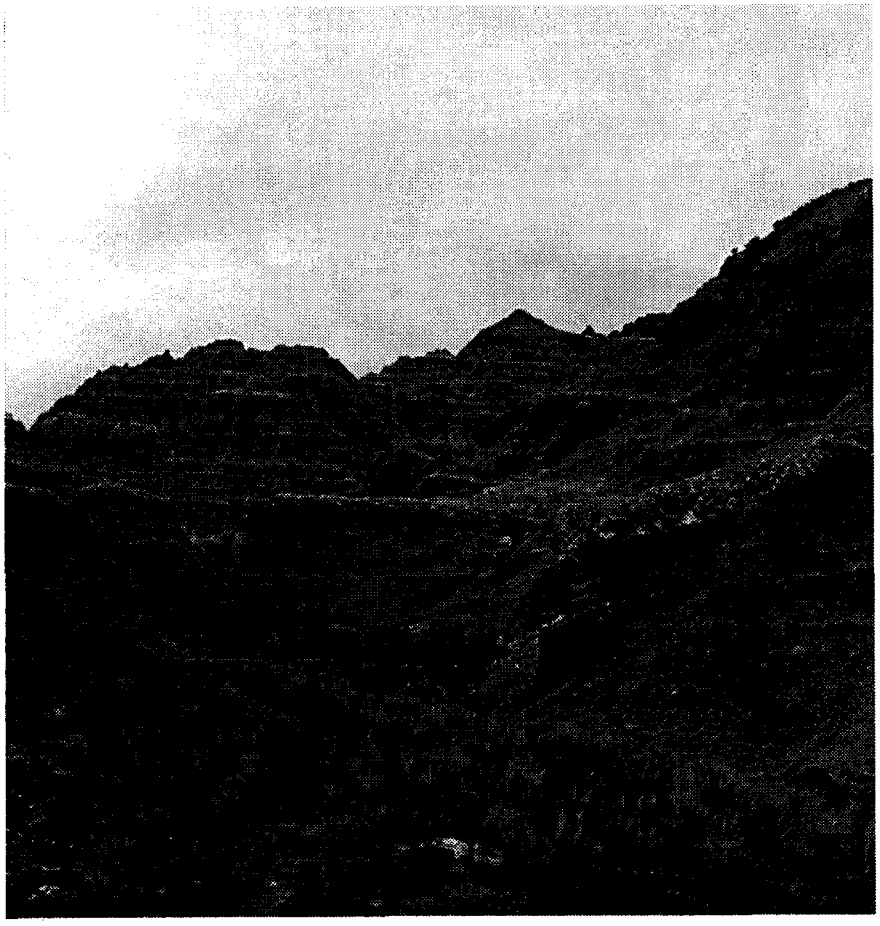
[4] Special note: This same map also appeared in RARE II: USDA Forest Service. 1978. Draft environmental statement, roadless area review and evaluation. Washington, DC. The map dated 1966 has **different types** from the 1964 map (and the 2d ed., rev. map, 1975.

Appendix 1

Potential Natural Community (PNC) Codes—Cross-Reference



This appendix contains 13 groupings or classifications of PNC codes. Groupings cover wetland vegetation, riverine riparian systems, extremely poor sites, low-productivity forest sites, coastal sand dune conditions, alpine and subalpine, USDA Forest Service standard range types, SAF cover types, SRM cover types, Küchler potential natural vegetation types, and ecoclass codes used in three wildlife habitat books.

Wetland vegetation—Water table available to roots throughout the growing season.

PNC	Description
MM	Moist meadow
MS	Subalpine, alpine moist and wet meadow
MT	Tule meadow
MW	Wet meadow
CCM1	Western redcedar/skunk cabbage
CCM2	Western redcedar/sedge
CCM3	Western redcedar-lodgepole/Labrador tea (coastal)
CEM1	Subalpine fir-Engelmann spruce/grass-sedge meadow
CEM2	Subalpine fir-Engelmann spruce/forb meadow
CEM3	Subalpine fir-Engelmann spruce/short shrub meadow
CFM1	Silver, noble fir/skunk cabbage
CHM1	Western hemlock/skunk cabbage
CLM1	Lodgepole pine/tall sedge-grass
CLM2	Lodgepole pine/dwarf shrub-grass
CLM3	Lodgepole pine/low huckleberry-grass
CLM9	Lodgepole pine-spruce/few flowered spikerush
CSM1	Sitka spruce/willow-waxmyrtle
FW10	Cowparsnip wet forbland
FW20	Cottonsedge-sphagnum-sedge wet meadow
FW30	Camas moist to wet meadow
FW40	Groundsel, beadlily wetlands
FW50	False hellebore wetlands
FS20	Subalpine-moist: lupine-Indian paintbrush-buttercup
FS30	Subalpine-wet: saussurea-monkeyflower-marshmarigold
HQM	Quaking aspen/blugrass moist meadow
HQM2	Quaking aspen/tall sedge moist meadow
HQM3	Quaking aspen/short sedge moist meadow
HQM4	Quaking aspen/shrub meadow
MM10	Tufted hairgrass moist meadow
MM20	Tall sedge moist meadow
MM30	Short sedge moist meadow
MM40	Redtop moist meadow
MM50	Spikesedge moist meadow
MM90	Kentucky bluegrass moist meadow

MS20	Subalpine, alpine moist grass/sedge meadows
MS30	Subalpine, alpine wet grass/sedge meadows
MT19	Bullrush standing water
MT80	Cattail standing water
MT99	Coastal saline water grass/sedge
MW10	Tall sedge wet meadow
MW20	Short sedge wet meadow
MW30	Rush wet meadow
MW40	Spikerush wet meadow
MW80	Coastal, freshwater grass/sedge
SW10	Willow wetlands
SW20	Alder wetlands
SW30	Hawthorn wetlands
SW40	Spiraea, blueberry wetlands
SW50	Currant, shrubby cinquefoil
SW80	Coastal shrub wetlands
WE13 59	Estuarian vegetated flats (eelgrass meadow) exposed at low tide

Riverine riparian systems—Most of the wetlands noted above may occur in the riverine riparian ecosystem. In addition, many moist soil plant communities, which do not classify as wetlands (Lyon 1993), occur adjacent to and in proximity to rivers and streams.

Wetlands are listed above.

PNC	Description
CCF110	THPL/ATFI-STCO4: western redcedar/ladyfern-Cooley's hedgenettle
CCS110	THPL/RUSP/OXOR: western redcedar/salmonberry/oxalis
CDS628	PSME/SYAL-FLOOD: Douglas-fir/snowberry-flood plain
CDS724	PSME/ACGL-FLOOD: Douglas-fir/vine maple-flood plain
CEF3	Subalpine fir-Engelmann spruce/tall forbs
CES511	PIEN/COST: Engelmann spruce/red-osier dogwood
CPH3	Ponderosa pine-quaking aspen
CPM1	Ponderosa pine/wildrye-bluegrass
CPS511	PIPO/SYAL-FLOOD: ponderosa pine/common snowberry-flood plain
CWF431	ABGR/CLUN: grand fir/queen's cup beadlilly
CWF611	ABGR/GYDR: grand fir/oakfern
CWF613	ABGR/ATFI: grand fir/ladyfern
CWH2	White fir-quaking aspen
CWM1	White fir/alder/snowberry shrub bottomland
CWM2	White, grand fir/forb bottomland
CWS314	ABGR/SYAL-FLOOD: grand fir/common snowberry-flood plain

HAF2	Red alder/short forbs
HAM1	Red alder overflow bottomland
HAM2	White alder overflow bottomland
HAS1	Red alder/salmonberry, thimbleberry
HAS3	Red alder/vine maple
HAS4	Red alder/devil's club
HBM1	Bigleaf maple overflow bottomland
HCG0	Cottonwood, ash bottomland with sedge, grass
HCS1	Cottonwood-willow bottomland
HCS2	Ash-willow overflow bottomland
HCS311	POTR2/SYAL: black cottonwood/common snowberry
HQS1	Aspen/hawthorn
HQS2	Aspen/common snowberry
MS1111	CABR: Brewer sedge
SS1911	PHEM: red mountainheath
SW50	Currant, shrubby cinquefoil
SW60	Sagebrush meadows (silver, mountain big sage)
SW70	Vine maple riparian

Extremely poor sites—Sites on scabland, serpentine; less than 250 pounds per acre per year of herbage production.

PNC	Description
NX	All N (nonvegetated types)
CARX	Subalpine fir, whitebark pine: rocky, steep, rough
CDRX	Douglas-fir: rocky, steep, rough
CERX	Subalpine fir: rocky, steep, rough
CFRX	Silver fir, noble fir: rocky, steep, rough
CLRX	Logepole pine: rocky, steep, rough
CMRX	Mountain hemlock: rocky, steep, rough
CPRX	Ponderosa, Jeffery pine: rocky, steep, rough
CJS811	JUOC/ARRI-SCAB: juniper/rigid sage-scabland
CLC2	Lodgepole pine-Douglas-fir, serpentine
CPG6	Jeffrey pine on serpentine, gabbro
FM9112	ERST2/POSA3: Douglas-buckwheat/Sandberg's bluegrass
FM9113	ERUM-RIDGE: sulfurflower-ridgetops
FM9911	ERLA-PHHE: eriophyllum-phacelia
FS5911	POPH-ALPINE: Douglas' knotweed-alpine (degenerated)
FX4111	LECOW-RIM: Wallowa lewisia-rims
GB99	POSA3-FEMI: Sandberg's bluegrass-annual fescue
GB9111	POSA3-DAUN: Sandberg's bluegrass-one-spike oatgrass
GBRX	Bunchgrass: rocky, steep, rough
GS40	Subalpine-alpine short, thin sedge
GS50	Subalpine needlegrass, squirreltail

HLEX	Liveoak: rocky, steep, rough
HMRX	Madrone: rocky, steep, ropugh
MTRX	Tanoak: rocky, steep, rough
SD9111	ARRI/POSA3-SCAB: rigid sagebrush/Sandberg's bluegrass-scabland
SD9131	ARRI/POSA3-LOMA: rigid sagebrush/Sandberg's bluegrass-lomatium
SD9211	ARAR/POSA3-HAST: low sagebrush/Sandberg's bluegrass-goldenweed
SD9212	ARAR/POSA3-DAUN: low sagebrush/Sandberg's bluegrass-one-spike oatgrass
SD9221	ARAR/POSA3: low sagebrush/Sandberg's bluegrass
SD9322	ERMI-PHOR: eriogonum-phasaria
SD9323	ERUM/STIPA-PUM: buckwheat/needlegrass-rhyolite
SM8111	ALSI (ROCKY SOIL): Sitka alder on rocky soil
SM8112	ACCI (ROCKY): vine maple on rocky soil
SS4921	ARAR/FERU: low sagebrush/red fescue

Low-productivity forest types—Types less than 26 cubic feet per acre per year.

PNC	Description
CA	All open parks of subalpine fir, mountain hemlock, whitebark pine
CAG112	PIAL/CARU: whitebark pine/pinegrass
CDG3	Douglas-fir/bunchgrass
CDG311	PIPO-PSME/AGSP: ponderosa pine-Douglas-fir/wheatgrass
CDS651	PSME/ARUR: Douglas-fir/bearberry
CEF321	ABLA2/LULA: subalpine fir/subalpine lupine
CES621	ABLA2/JUCO4: subalpine fir/common juniper
CJ	All juniper types
CLC1	Lodgepole pine-whitebark pine, subalpine
CLC111	PICO-PIAL/PELA: lodgepole-whitebark/penstemon
CLC112	PICO-PIAL/ARCO2: lodgepole-whitebark pine/sandwort
CLC2	Lodgepole pine-Douglas-fir on serpentine
CLG311	PICO/STOC-BASIN: lodgepole/needlegrass-basins
CLG313	PICO/STOC-LUCA-LINU: lodgepole/needlegrass-lupine-linanthastrum
CLG314	PICO/STOC-LUCA-PUM: lodgepole/needlegrass-lupine-pumice
CLG413	PICO/CAPE-STOC-BASIN: lodgepole/sedge-needlegrass-basins
CLG415	PICO/SIHY-CAPE: lodgepole/squirreltail-sedge
CLM211	PICO/ARUV-PUM: lodgepole/bearberry-pumice
CLM911	PICO-PIEN/ELPA2: lodgepole-spruce/spikerush
CLS112	PICO/ARTR-RHYO: lodgepole/big sagebrush-rhyolite
CLS211	PICO/PUTR/STOC-PUM: lodgepole/bitterbrush/needlegrass-pumice
CLS213	PICO/PUTR/FORB-PUM: lodgepole/bitterbrush/forbs-pumice
CLS214	PICO/PUTR/FEID-PUM: lodgepole/bitterbrush/fescue-pumice
CLS215	PICO/RICE-PUTR/STOC: lodgepole/current-bitterbrush/needlegrass
CLS216	PICO/PUTR-RHYO: lodgepole/bitterbrush-rhyolite
CLS311	PICO/ARNE: lodgepole/pinemat manzanita
CLS411	PICO/VASC-BLUES: lodgepole/grouse huckleberry-Blue Mountains
CLS511	PICO/VAME-BLUES: lodgepole/big huckleberry-Blue Mountains
CLS831	Rolling dune: open lodgepole/kinnikinick-hairy manzanita
CLS911	PICO/CEVE-ARPA-PUM: lodgepole/ceanothus-manzanita-pumice

CMF251	TSME/CABI: mountain hemlock/marshmarigold
CPC2	Ponderosa pine-juniper
CPG111	PIPO/AGSP-BLUE: ponderosa/wheatgrass-Blue Mountains
CPG112	PIPO/FEID-BLUE: ponderosa/Idaho fescue-Blue Mountains
CPG132	PIPO/AGSP-WALLO: ponderosa/wheatgrass-Wallowa Mountains
CPG222	PIPO/CAGE: ponderosa/elk sedge
CPG6	Jeffery pine/bunchgrass, serpentine
CPM111	PIPO/ELGL: ponderosa/blue wildrye
CPS111	PIPO/PUTR-ARTR/FEID: ponderosa/bitterbrush-big sagebrush fescue
CPS112	PIPO/PUTR-ARTR/SIHY: ponderosa/bitterbrush-big sagebrush/squirreltail
CPS213	PIPO/PUTR-ARPA/STOC: ponderosa/bitterbrush-manzanita/needlegrass
CPS214	PIPO/PUTR-ARPA/CAPE: ponderosa/bitterbrush-manzanita/sedge
CPS215	PIPO/PUTR/CAPE-PUM: ponderosa/bitterbrush/sedge-pumice
CPS216	PIPO/PUTR/FEID-AGSP: ponderosa/bitterbrush/fescue-wheatgrass
CPS217	PIPO/PUTR-ARPA/FEID: ponderosa/bitterbrush-manzanita/fescue
CPS218	PIPO/PUTR/SIHY-RHYO: ponderosa/bitterbrush/squirreltail-rhyolite
CPS222	PIPO/PUTR/CAGE: ponderosa/bitterbrush/elk sedge
CPS226	PIPO/PUTR/FEID-AGSP: ponderosa/bitterbrush/fescue-wheatgrass
CPS232	PIPO/CELE/CAGE: ponderosa/mountain-mahogany/elk sedge
CPS233	PIPO/CELE/PONE: ponderosa/mountain-mahogany/Wheeler bluegrass
CPS234	PIPO/CELE/FEID-AGSP: ponderosa/mountain-mahogany/fescue-wheatgrass
HL	Canyon live oak
HOG1	Oregon or black oak/bunchgrass
HOG3	Oregon or black oak/annual grass
HOS1	Oregon or black oak/poison oak
HOS6	Oregon or black oak/bitterbrush
NCC1	Cinders, glacial outwash with scattered subalpine fir, whitebark pine
NCC2	Cinders, glacial outwash with scattered mountain hemlock
NCC3	Lava flow, glacial outwash with scattered Douglas-fir, true fir
NCC4	Lava flow, mud flow with scattered Douglas-fir and oak
NCC5	Cinders, lava with lodgepole pine
NCC6	Glacial alluvial flows with lodgepole pine
NCH1	Mud, glacial flows with alder, willow, aspen
NMC1	Mine tailings, dredgings with scattered lodgepole pine
NMH1	Mine tailings, dredgings with scattered cottonwood
NMH2	Mine tailings, dredgings with scattered aspen
NRA1	Alpine rocky land with scattered whitebark pine, subalpine fir, mountain hemlock
NTA1	Alpine talus slopes with scattered whitebark pine, subalpine fir, mountain hemlock
NTC0	Talus slopes with scattered conifers
NTH1	Talus slopes with scattered bigleaf maple
NTH2	Talus slopes with scattered Oregon or black oak

Coastal sand dune conditions—Conditions in sand dune areas, not just coastal.

PNC	Description
CLS811	Deflation plain: lodgepole/salal-evergreen huckleberry/sedge
CLS812	Flood-plain dune: lodgepole/rhododendron/evergreen huckleberry
CLS821	Stabilized dune: lodgepole/rhododendron/evergreen huckleberry
CLS822	Eroding dune: lodgepole/rhododendron/evergreen huckleberry
CLS823	Dune slip face: lodgepole/rhododendron/evergreen huckleberry
CLS831	Rolling dune: open lodgepole/kinnikinnick-hairy manzanita
CSS411	Stabilized dune: Sitka spruce-Douglas-fir/rhododendron/evergreen huckleberry
CSSR12	Flood plain: Sitka spruce-lodgepole-western hemlock/rhododendron
CSS421	Sandy, steep slope: Sitka spruce-Douglas-fir/rhododendron/evergreen huckleberry
CSSF22	Sandy, gentle slope: Sitka spruce-Douglas-fir/rhododendron/evergreen huckleberry
GR81	Foredune (sandy dune geology, grass)
GR8111	Foredune: beachgrass, coastal
GR82	Hummocks (sand dune geology, grass)
GR8211	Hummocks, occasionally wet: dense beachgrass-lupine-bluegrass, coastal
GR8112	Hummocks, occasionally wet, unstable: open beachgrass-lupine, coastal
GR8213	Hummocks, dry eroding: beachgrass-lupine-bluegrass, coastal
GR83	Dune slip face: beachgrass
GR8311	Dune slip face: beachgrass, stabilized, coastal
MM9811	Deflation plain potholes: red fescue-brown rush-slough sedge
MT8111	Coastal: cattail-bulrush/water lily-waterweed
MW8111	Coastal: valley fill: slough sedge/skunk cabbage-red currant
MW8112	Coastal: slough sedge/water lily-pondweed-cattail
NSG8	Coastal sand dune, rolling, partial beachgrass stability
NSN111	Pacific Coast beach, Siuslaw NF
NSN2	Transverse ridge sand dune system
NSN211	Transverse ridge, occasionally wet, winter stable, coastal
NSN212	Transverse ridge, dry, moving sand, coastal
NSN3	Oblique ridge, sand dune system
NSN311	Oblique ridge, fore slope moving sand, coastal
NSN312	Oblique ridge, precipitation ridge, active sand, coastal
NSN313	Oblique ridge, precipitation ridge, active threatening vegetation
NSN4	Parabola sand dune system
NSN0	Open sand of any dune character
SW81	Coastal shrubs in a deflation plain
SW8111	Deflation plain, high water: willow-waxmyrtle, salal, pine
SW8112	Deflation plain, high water: salal-evergreen huckleberry, willow
WE1311	Active flood plain, stream deposits, tidal flooding, Siuslaw NF
WE1319	Estuarial, exposed sandy bottom at low tide
WE1359	Tidal salt marsh, eelgrass, exposed at low tide

Alpine and subalpine—Plant communities at and above timberline.

PNC	Description
CA	All subalpine fir, whitebark pine, mountain hemlock open parks
CLC1	Lodgepole pine, whitebark pine, alpine
CLC5	Lodgepole pine-mountain hemlock
FS	All subalpine forb fields, alpine forb fields
GS	All subalpine or alpine grassland
MS	All subalpine or alpine moist to wet meadows
NI	Ice fields, glaciers
NCA0	Nonvegetated cinders, lava fields in alpine conditions (NCA1, A2, A3, A4)
NCC1	Nonvegetated cinders, lava fields with subalpine fir, whitebark pine
NCC2	Nonvegetated cinders, lava fields with mountain hemlock
NRA0	Rockland in alpine, subalpine locations (NRA1, A2, A3, A4)
NTA0	Talus slopes in alpine or subalpine locations (NTA1, A2, A3, A4)
SS	All subalpine and alpine shrubland
TX	Tundra
WL69	All WL types—lakes with ice cover longer than 210 days
WR19	All WR types—rivers with mean annual temperature less than 45° F

USDA Forest Service standard range types—Types are from: FSH 2209.14 Service-wide range analysis and management handbook, WO Amendment 2209.14-92-1, 1.12 vegetation cover types (USDA Forest Service 1992).

Range type (and definition)	PNC	Description
1 (grasslands)	GX	All grassland designations
2 (meadows)	MX	All meadow designations
	FW	All forb-dominated wetlands
	SW	All shrub-dominated wetlands
3 (forbs)	FX	All forb designations
4 (sagebrush)	SD10	Low sagebrush
	SD20	Big sagebrush
	SD70	Rabbitbrush
	SD90	Scabland sagebrush
	SDB0	Biscuit-scabland sagebrush
	SS40	Subalpine sagebrush
5 (browse)	SD30	Bitterbrush
	SD40	Mountain mahogany
	SD80	Snowberry-cherry-rose
	SM30	Cherry-mockorange-serviceberry-rose-oceanspray

6 (coniferous)	CA	Subalpine fir, whitebark pine open parks
	CDG0	Douglas-fir with grass-dominated ground vegetation
	CDS4	Douglas-fir with ceanaothus-manzanita
	CDS6	Douglas-fir with spiraea-snowberry
	CDS7	Douglas-fir with ninebark
	CLC1	Lodgepole pine-whitebark pine, alpine
	CLG0	Lodgepole pine with grass-dominated ground vegetation
	CLM0	Lodgepole pine meadows
	CLS1	Lodgepole pine with sagebrush
	CLS2	Lodgepole pine with bitterbrush
	CP	All ponderosa pine or Jeffrey pine
	CWC1	White fir—incense-cedar—pine
	CWC2	White fir-Douglas-fir-ponderosa pine
	CWC4	White fir-ponderosa-white or sugar pine
	CWG1	Grand fir/pinegrass-elk sedge
	CWH2	White fir-quaking aspen
	CWM1	White fir/alder/snowberry-shrub meadows
	CWS1 13	ABCO/ARPA-SYAL/CAPE
	CWS1 15	ABCO/CEVE/CAPE
	CWS3 21	ABGR/SPBE
7 (nonrange coniferous)	CX	Types not listed above or under juniper
8 (rock)	NX	Nonvegetated land
9 (juniper)	CJ	All juniper
10 (broad-leaved)	HX	All hardwood

Society of American Foresters (SAF) cover types—Types are from: Eyre, F.H., ed. 1980. Forest cover types of the United States and Canada. Washington, DC: Society of American Foresters.

SAF type	PNC	Description
205	CM	Mountain hemlock (mountain hemlock)
206	CE	Engelmann spruce-subalpine fir (subalpine fir, Engelmann spruce closed forest)
207	CR	Red fir (Shasta red fir)
208	CA	Whitebark pine (subalpine fir, whitebark pine, mountain hemlock open parks)
209	none	Bristlecone pine (none in the Pacific Northwest)
210	CD	(Some) interior Douglas-fir (Douglas-fir), seral in:
	CW	(Some) white, grand fir
211	CW	(Some) white fir (white, grand fir)

212		Western larch, seral in:
	CD	Douglas-fir
	CE	Subalpine fir-Engelmann spruce
	CW	(Some) white, grand fir
213	CW	Grand fir (white, grand fir), often seral in:
	CH	Western hemlock
	CC	Western redcedar
214		(Eliminated in 1980)
215		Western white pine, seral in:
	CW	White or grand fir
	CF	Silver, noble fir
	CR	Shasta red fir
	CH	Western hemlock
	CC	Western redcedar
	CE	Subalpine fir-Engelmann spruce
216	none	Blue spruce (none in the Pacific Northwest)
217	HQ	Quaking aspen (quaking aspen)
	CLH1	Lodgepole pine-quaking aspen
	CPH3	Ponderosa pine-quaking aspen
	CWH2	White fir-quaking aspen
218	CL	Lodgepole pine (lodgepole pine climax), also seral in:
	CC	Western redcedar
	CE	Subalpine fir-Engelmann spruce
	CR	Shasta red fir
	CW	White, grand fir
	CF	Silver, noble fir
219	none	Limber pine (none in the Pacific Northwest)
220	none	Rocky Mountain juniper (none in the Pacific Northwest)
221	HA	Red alder (alder climax or stable), seral in:
	CC	Western redcedar
	CH	Western hemlock
	CS	Sitka spruce
222	HC	Black cottonwood-willow (cottonwood-ash bottomland)
223	CS	Sitka spruce (Sitka spruce)
224	CH	Western hemlock (western hemlock)
225	CH	Western hemlock-Sitka spruce (western hemlock)
	CS	Sitka spruce
226	CF	Coastal true fir-hemlock (silver, noble fir)
227	CC	Western redcedar-western hemlock (western redcedar)
	CH	(Some) western hemlock
228	CC	Western redcedar

229	CD	Pacific Douglas-fir (Douglas-fir), seral in:
	CC	Western redcedar
	CH	Western hemlock
	CF	Silver, noble fir
	CW	(Some) white, grand fir
230	CH	Douglas-fir-western hemlock (western hemlock)
	CC	(Some) western redcedar
	CF	(Some) silver, noble fir
231	CDC1	Port-Orford-cedar (Douglas-fir—Port-Orford-cedar)
	CHC1	Western hemlock—Port-Orford-cedar
	CT	Port-Orford-cedar
	CWC6	White fir—Port-Orford-cedar
232	CDC6	Redwood (Douglas-fir—redwood)
	HTC1	Tanoak—redwood—Douglas-fir
233	HO	Oregon white oak (Oregon white, California black oak)
	CDH3	(Douglas-fir/white oak)
	CPH2	(Ponderosa, Jeffrey-oak)
234	HM	Douglas-fir—tanoak—Pacific madrone (madrone)
	HT	Tanoak
	CDH1	Douglas-fir/tanoak
	CDH2	Douglas-fir/madrone
	CHH1	Western hemlock-tanoak-laurel
	CPH1	Ponderosa-Jeffrey-madrone
235	HC	Cottonwood-willow (cottonwood-ash bottomland)
236	none	Bur oak (none in the Pacific Northwest)
237	CP	Interior ponderosa pine, (ponderosa, Jeffrey pine), seral in:
	CD	(Some) Douglas-fir
	CW	(Some) white, grand fir
238	CJ	Western juniper (juniper)
239	none	Pinyon-juniper (none in the Pacific Northwest)
240	none	Arizona cypress (none in the Pacific Northwest)
241	none	Western live oak (none in the Pacific Northwest)
242	none	Mesquite (none in the Pacific Northwest)
243	CDC2	Sierra Nevada mixed conifer (Douglas-fir, sugar pine southwestern Oregon)
	CDC3	Douglas-fir incense-cedar, southwestern Oregon
	CDC1	Ponderosa pine, incense-cedar
244	CDC5	Pacific ponderosa pine-Douglas-fir (Douglas-fir–ponderosa southwestern Oregon)

245	CPH1	Pacific ponderosa pine (ponderosa, Jeffrey-madrone)
	CPH2	Ponderosa pine, Jeffrey-oak
	CPS6	Ponderosa/manzanita-deerbrush
246	HO	California black oak, (Oregon white, California black oak), seral in:
	CDH2	Douglas-fir-white oak
	CPH2	Ponderosa-oak
247	CP	Jeffrey pine (ponderosa, Jeffrey pine)
	CDC5	Douglas-fir-ponderosa pine, Jeffrey pine
	CPC1	Ponderosa pine, Jeffrey–incense-cedar
	CPG6	Jeffrey pine-serpentine/gabbro-grass
248	none	Knobcone pine (too little to assign)
249	HL	Canyon live oak (over 16 feet tall) (canyon live oak)
250	none	Digger pine-oak (none in the Pacific Northwest)
255	none	California coast live oak (none in the Pacific Northwest)

Society for Range Management (SRM) cover types—Types are from: Shiflet, Thomas N., ed. 1994. Rangeland cover types of the United States. Denver, CO: Society for Range Management. 152 p.

SRM type	PNC	Description
101	GB40	Bluebunch wheatgrass; all associations
102	GB50	Idaho fescue; all associations
103	GS11	Green fescue; all associations
104	SD31	Antelope bitterbrush/bluebunch wheatgrass
105	SD31	Antelope bitterbrush/Idaho fescue
106	GB90	Bluegrass scabland
107	CJS2	Western juniper/big sagebrush; all associations
108	GS12	Alpine Idaho fescue; all associations
109	CPS0	Ponderosa pine/shrubland; all associations
110	CPG0	Ponderosa pine/grassland; all associations
201-203		None in Pacific Northwest
204	SM80	North coastal shrub (California-Oregon)
205		None in Pacific Northwest
206	SC	Chamise chaparral
207		None in Pacific Northwest
208	SC10	Ceanothus mixed chaparral
209	SC20	Montane shrubland
210	SD31	Bitterbrush

211-212		None in Pacific Northwest
213	GS20	Alpine grass and sedgeland
214	GM20	Coastal prairie (California-Oregon)
215		None in Pacific Northwest
216	MM	Montaine meadows, moist meadows,
217	MW	Grass-sedge wetlands
301		None in Pacific Northwest
302	GB40	Bluebunch wheatgrass-Sandberg bluegrass
303		None in Pacific Northwest
304	GB50	Idaho fescue-bluebuch wheatgrass
305-312		None in the Pacific Northwest
313	MM	Tufted hairgrass-sedge
314-323		None in Pacific Northwest
324	SD22	Threetip sagebrush/Idaho fescue
401	SD20	Basin big sagebrush
402	SD29	Mountain big sagebrush
403	SD20	Wyoming big sagebrush
404	SD22	Threetip sagebrush
405	SD10	Black sagebrush
406	SD10	Low sagebrush
407	SD91	Stiff sagebrush
408	SD	Other sagebrush types
409	FM30	Tall forb-grass
410	GS20	Alpine rangeland (grass-forb)
411	HQ	Aspen woodland
412-413		None in Pacific Northwest
414	DC10 DC20 DC30 DC40	Salt desert shrub (greasewood) (Shadscale) (Winterfat) (Hopsage)
415	SD40	Curlleaf mountain-mahogany
416-418		None in Pacific Northwest
419	SM30	Bittercherry shrublands

420	SM30	Snowbush (ceanothus) shrublands
421	SM30	Chokecherry-serviceberry-rose
501-921		None in Pacific Northwest

Küchler types—Potential natural vegetation codes for the United States (see app. 4).

Map dated 1969	1964	PNC	Description
K1	K1	CS	(All) spruce-cedar-hemlock forest (Sitka spruce)
K2	K2	CH	Cedar—hemlock—Douglas-fir forest (coast, Cascades) (Some western hemlock)
		CC	Some western redcedar
K3	K3	CF	(All) silver fir—Douglas-fir forest (silver, noble fir)
K4	K4	CM	(All) fir-hemlock forest (mountain hemlock)
		CE	(Some) subalpine fir, Engelmann spruce closed forest
K5	K5		Mixed conifer forest (southwestern Oregon-northern California)
		CDC1	Douglas-fir—Port-Orford-cedar/yew
		CDC2	Douglas-fir—sugar pine, southwestern Oregon
		CDC3	Douglas-fir—incense-cedar, southwestern Oregon
		CDC5	Douglas-fir—ponderosa pine, southern Oregon
		CDS4	Douglas-fir/ceanothus—manzanita
		CPC1	Ponderosa pine, Jeffrey—incense-cedar
		CWC1	White fir—incense-cedar
		CWC2	White fir, Douglas-fir, ponderosa pine
K6	K6		Redwood forest
		CDC6	Douglas-fir—redwood
		HTC1	Tanoak—redwood—Douglas-fir
K7	K7	CR	(All) red fir forest (red fir, Shasta red)
K10	K10		Ponderosa shrub forest
		CPC1	Ponderosa, Jeffrey—incense-cedar
		CPC2	Ponderosa, juniper
		CPC3	Ponderosa, lodgepole pine
		CPS1	Ponderosa, Jeffrey/big sagebrush
		CPS2	Ponderosa, Jeffrey/bitterbrush
		CPS3	Ponderosa/ceanothus
		CPS4	Ponderosa/oceanspray-cherry tall shrub
		CPS5	Ponderosa/snowberry-spirea
		CPS6	Ponderosa/manzanita-deerbrush
		CPS7	Ponderosa/ninebark
		CPS0	Ponderosa, Jeffrey with shrub-dominated ground vegetation

K10	K11		Western ponderosa forest
		CPG1	Ponderosa/bunchgrass—nonpumice
		CPG2	Ponderosa/rhizomatous grass-sedge
		CPG3	Ponderosa/bunchgrass—pumice soil
		CPG6	Jeffrey pine—serpentine/gabbro bunchgrass
		CPM1	Ponderosa, Jeffrey/wildrye-bluegrass
		CPMX	Ponderosa meadows
K11	K12		Douglas-fir forest
		CDF1	Douglas-fir/beargrass
		CDF2	Douglas-fir/twinflower
		CDG1	Douglas-fir/pinegrass—elk sedge (often with ponderosa pine)
		CDG2	Douglas-fir/blue wildrye
		CDG3	Douglas-fir/bunchgrass
		CDG8	Douglas-fir/subalpine sedge
		CDS2	Douglas-fir/oceanspray—vine maple—salal
		CDS4	Douglas-fir/ceanothus, manzanita
		CDS6	Douglas-fir/spiraea—snowberry—oceanspray
		CDS7	Douglas-fir/ninebark
		CDS8	Douglas-fir/big huckleberries
K12	K13		Cedar-hemlock-pine forest (northern Rocky Mountains)
		CCF1	Redcedar/lady fern
		CCF2	Redcedar/beadlily
		CCS2	Redcedar/devil's club
		CCS3	Redcedar/pachistima
		CHC4	Western hemlock/redcedar
		CHS6	Western hemlock/pachistima
K13	K14		Grand fir-Douglas-fir forest
		CW	(Most) white, grand fir
K14	K15	CE	(All) western spruce-fir forest (subalpine fir-Engelmann spruce)
K49	K24	CJ	(All) juniper steppe woodland (juniper)
K89	K25	HC	(All) alder-ash forest (cottonwood, ash, bottomland)
		HAM1	Alder-overflow bottomland (*Alnus rubra*)
		HAM2	Alder-overflow bottomland (*Alnus rhombifolia*)
		HAM0	Alder meadows (moist or wet)
		HBM1	Bigleaf maple overflow bottomland
K22	K26	HO	(All) Oregon oakwoods
K25	K29		California mixed evergreen forest (madrone, chinkapin, tanoak, canyon live oak-California-laurel, Douglas-fir)
		CDH1	Douglas-fir/tanoak
		CDH2	Douglas-fir/madrone
		CDH3	Douglas-fir/white oak
		CDH4	Douglas-fir/bigleaf maple

		CDH5	Douglas-fir/chinkapin
		CDH6	Douglas-fir/California-laurel
		CDS1	Douglas-fir/canyon live oak
		HL	(All) canyon live oak (over 16 feet tall)
		HM	(All) madrone
		HTS1	Tanoak/evergreen huckleberry
K29	K33	SC	(All) chaparral (chaparral, evergreen shrubland)
K29	K34	SC	(All) montane chaparral (chaparral, evergreen shrubland)
K31	K37	SD49	Mountain-mahogany—oak scrub (mountain-mahogany)
K34	K40	DC	(All) saltbush-greasewood (cold desert)
K42	K49	MT	(All) tule marshes (tule meadows-standing water)
K43	K50		Fescue-wheatgrass
		GB50	Idaho fescue dominant
		GB60	Rough fescue dominant
K44	K51		Wheatgrass-bluegrass
		GB11	Threeawn-sand dropseed dominant
		GB21	Needlegrass dominant
		GB30	Squirreltail dominant
		GB40	Bunchgrass dominated by wheatgrasses
		GB41	Bluebunch wheatgrass dominant
		GB42	Whitmar wheatgrass (seeded or native) dominant
		GB43	Crested wheatgrass (seeded) dominant
		GB90	Bunchgrass scabland
		GB91	Bluegrass scabland
		GBB0	Biscuit-scabland, grass dominant
		GBC0	Bunchgrasses with a few scattered conifers
		GBS0	Bunchgrasses with a few scattered shrubs
K45	K52		Alpine meadows and barren
		CA	(All) subalpine fir, mountain hemlock, whitebark pine open parks
		FS	(All) subalpine forb fields, alpine form fields
		GS(All)	subalpine or alpine grassland
		MS	(All) subalpine or alpine moist to wet meadows
		NCA1	Alpine trees scattered on cinders, lava flow
		NCA2	Alpine grasses scattered on cinders, lava flow, glacial wash
		NCA3	Alpine dwarf juniper on cinders, lava, pumice
		NCA4	Alpine, steep cinders-hulsea
		NCC1	Subalpine fir, whitebark pine, on cinders, lava flow
		NCC2	Mountain hemlock on cinders, lava flow
		NI	(All) ice fields, glaciers, ice-dominated land
		NRA1	Rocky land with alpine trees
		NRA2	Rocky land with alpine grasses or sedges
		NRA3	Rocky land with alpine juniper
		NRA4	Rocky land with alpine forbs

		NTA1	Talus land with alpine trees
		NTA1	Talus land with alpine grass, sedge
		NTA3	Talus land with alpine juniper
		NTA4	Talus land with alpine forbs
		SS	(All) subalpine and alpine shrubland
K49	K55	SD	(All) sagebrush steppe (dry shrubland, sagebrush)

No Küchler types for:

AX	Administrative sites
CL	Climax or stable-state lodgepole pine
FM	Moist (mesic) forblands in the forest zone
FW	Wet forblands, forb meadows
GA	Annual grass vegetation
GM	Moist (mesic) grassland within the forest zone
GR	Rhizomatous grass or sedge vegetation
HQ	Quaking aspen forest and meadows
MD	Dry meadows (water table available part of growing season)
MM	Moist meadows (water table available all growing season)
MW	Wet meadows (surface moist to wet all growing season)
NX	Most nonvegetated types below alpine and subalpine
SM	Moist (mesic) shrubland, forest zone shrubs and shrubland
SW	Wet shrublands, shrub meadows
WX	Water areas

Wildlife habitat cross-reference—Thomas, Jack Ward, tech. ed. 1979. Wildlife habitats in managed forests: the Blue Mountains of Oregon and Washington. Handb. 553. Washington, DC: U.S. Department of Agriculture, Forest Service. 512 p.

Plant community	PNC	Plant association
Sagebrush-bitterbrush	SD9111	Stiff sage scabland
	SD1911	Low sagebrush/bunchgrass
	SD2911	Big sagebrush/bunchgrass
	SD39	Bitterbrush/bunchgrass
Western juniper	CJG111	Juniper/bunchgrass
	CJS811	Juniper/stiff sage scabland
	CJS111	Juniper/low sagebrush/bunchgrass
	CJS211	Juniper/big sagebrush/bunchgrass
Ponderosa pine	CPG111	Ponderosa pine/wheatgrass
	CPG112	Ponderosa pine/Idaho fescue
	CPS221	Ponderosa pine/bitterbrush/Ross' sedge
	CPM111	Ponderosa pine/blue wildrye
Mixed conifer	CDG111	Ponderosa pine—Douglas-fir/elk sedge
	CDS611	Ponderosa pine—Douglas-fir/ snowberry/oceanspray
	CDS711	Ponderosa pine—Douglas-fir/ninebark
	CWG111	Grand fir/pinegrass—residual soil
	CWG112	Grand fir/pinegrass—ash soil

White (grand) fir	CWF311	Grand fir/twinflower-forb
	CWS211	Grand fir/big huckleberry
	CWS811	Grand fir/grouse huckleberry
Subalpine fir	CES311	Subalpine fir/big huckleberry
	CES511	Subalpine fir/grouse huckleberry
	CAG111	Subalpine fir-whitebark pine/elk sedge
Lodgepole pine	CLG211	Lodgepole pine/pinegrass-grouse huckleberry
	CLS511	Lodgepole pine/big huckleberry
	CLS411	Lodgepole pine/grouse huckleberry
Other shrubs	SM31	Snowberry shrubfields
	SM19	Ninebark shrubfields
	SM29	Thinleaf alder snowslides
Curlleaf mountain-mahogany	SD49	Mountain-mahogany/grass
Dry meadow	MD	Dry meadow
Moist meadow	MM	Moist meadow
	MW	Wet meadow
Quaking aspen	HQM1	Quaking aspen meadow
Other grasses	GB4911	Bunchgrass, shallow soil, gentle slopes
	GB4912	Bunchgrass, deep soil, gentle slopes
	GB4913	Bunchgrass, shallow soil, steep slopes
	GB4914	Bunchgrass, deep soil, steep slopes
	GB9111	Bluegrass scabland
	GBB9	Biscuit-scabland
Alpine meadows	CAG111	Subalpine fir-whitebark pine/elk sedge
	SS4911	Subalpine sagebrush
	GS1211	Subalpine Idaho fescue
	GS3911	Subalpine elk sedge
	FS5911	Subalpine fleeceflower

Brown, E. Reade, tech. ed. 1985. Management of wildlife and fish habitats in forests of western Oregon and Washington. Part 1: Chapter narratives. R6 F&WL-192-1985. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 332 p.

Plant community	**PNC**	**PNC series and subseries**
Herbaceous wetland	MD	Dry meadows
	MM	Moist meadows
	MW	Wet meadows
	MT	Tule meadows
	FW10	Wet forbland
	FS20	Subalpine-moist: lupine-Indian paintbrush
	FS30	Subalpine-wet: saussurea-monkey-flower

Hardwood-shrubby wetland	HAM1	Red alder overflow bottomlands
	HAM2	White alder overflow bottomlands
	HCS1	Cottonwood-willow bottomlands
	HCS2	Ash-willow bottomlands
	HBM1	Bigleaf maple overflow bottomlands
SWShrub wetlands		
Coniferous wetland	CCM0	Western redcedar/wetland
	CHM0	Western hemlock/skunk cabbage wetland
Grass-forb dry hillsides	AG	Administrative, permanent pasture
	GA	Annual grassland
	GM	Mesic grassland within the forest zone
	GMC9	Mesic grassland with scattered conifers
	GMS9	Mesic grassland with scattered shrubs
	GB	(Some) bunchgrass grassland (only some types)
Mountain shrubland and chaparral	SC	Chaparral (all)
	SM	Moist (mesic) shrubland within the forest zone
Deciduous hardwood forest	HB	Bigleaf maple
	HO	Oregon white oak, California black oak
Evergreen hardwood forest	HL	Canyon live oak over 16 feet tall
	HM	Madrone
	HT	Tanoak over 16 feet tall
Red alder forest	HA	Red alder (as a climax dominant)
	CC	Redcedar-alder is seral in this type
	CH	Western hemlock-alder is seral in this type
	CS	Sitka spruce-alder is seral in this type.
Conifer-hardwood	CDH9	Douglas-fir with associated forest hardwoods
	CHH9	Western hemlock with associated hardwoods
	CPH9	Ponderosa or Jeffrey pine with hardwoods
Mixed conifer forest	CDC9	Douglas-fir with associated conifers
	CPC9	Ponderosa pine with associated conifers
	CHC9	Western hemlock with associated conifers
Temperate conifer forest	CC	Western redcedar
	CDS1	Douglas-fir/canyon live oak
	CDS2	Douglas-fir/oceanspray—vine maple—salal
	CDS3	Douglas-fir/rhododendron—hazel—dogwood
	CDS5	Douglas-fir/poison oak—rose
	CH	Western hemlock
	CW	(Some) white (grand) fir in west-side conditions
	CS	Sitka spruce
High temperate conifer forest	CE	(Some) subalpine fir-Engelmann spruce—west-side only
	CF	Silver and noble fir
	CM	Mountain hemlock
	CR	Shasta red fir

Subalpine forest parks	CA	Subalpine fir, whitebark pine, mountain hemlock parks
	FS	Subalpine forb fields
	GS	Subalpine and alpine grassland
	MS	Subalpine and alpine meadows (subirrigated)
	SS	Subalpine and alpine shrub fields
Lodgepole pine[1]	CA	Subalpine fir, whitebark pine open parks
	CE	Subalpine fir-Engelmann spruce
	CF	Silver or noble fir
	CM	Mountain hemlock
	CF	Shasta red fir
Shore pine	CLS8	Shore pine/salal-huckleberry

Dealy, J. Edward; Leckenby, Donavin A.; Concannon, Diane M. 1981. Wildlife habitats in managed rangelands—the Great Basin of southeastern Oregon: Plant communities and their importance to wildlife. Gen. Tech. Rep. PNW-120. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 66 p.

Plant community	PNC	PNC series and subseries
Mountain-mahogany/ mountain big sage	SD40	Mountain-mahogany/big sagebrush
Mountain-mahogany/ mountain snowberry	SD44	Mountain-mahogany/snowberry
Mountain-mahogany/ pinegrass	SD42	Mountain-mahogany/rhyzomatous grass
Mountain-mahogany/ Idaho fescue	SD41	Mountain-mahogany/bunchgrass
Mountain-mahogany/ bluebunch wheatgrass	SD41	Mountain-mahogany/bunchgrass
Squaw apple/ bunchgrass	SD30	Bitterbrush-squaw apple
Western juniper/ big sagebrush/ bluebunch wheatgrass	CJS2	Juniper/big sagebrush
Western juniper/ big sagebrush/ Idaho fescue	CJS2	Juniper/big sagebrush
Basin big sagebrush/ bluebunch wheatgrass	SD20	Big sagebrush
Wyoming big sagebrush/ bunchgrass	SD20	Big sagebrush

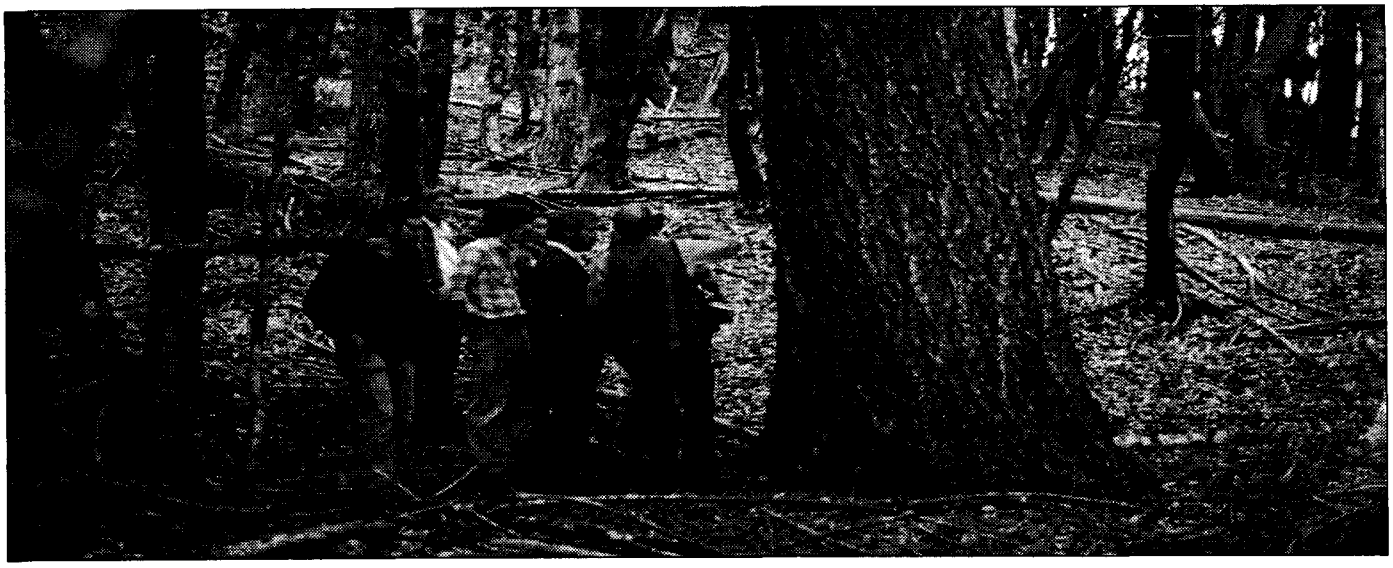
[1] NOTE: lodgepole pine is successional in these series.

Mountain big sagebrush/ bunchgrass	SD20	Big sagebrush
Threetip sagebrush/ bunchgrass	SD22	Treetip sagebrush
Bolander silver sage-brush/bunchgrass	SD23	Silver sagebrush
Mountain silver sage-brush/bunchgrass	SD23	Silver sagebrush
Stiff sagebrush/ bunchgrass	SD91	Stiff sagebrush
Low sagebrush/ bunchgrass	SD10	Low sagebrush
Cleftleaf sagebrush/ bunchgrass	SD	Dry shrubland
Early low sagebrush/ bunchgrass	SD10	Low sagebrush
Black sagebrush/ bunchgrass	SD10	Low sagebrush
Black greasewood/grass	DC10	Greasewood
Schadscale-saltbush/ bunchgrass	DC20	Shadscale
Riparian	—	No provision
Permanently wet meadows	MW	Wet meadows
Seasonally wet meadows	MM	Moist meadows
Quaking aspen/mountain big sagebrush	HQS3	Aspen/sagebrush
Quaking aspen/grass	HQM1	Aspen/grass meadows
Subalpine big sagebrush/ bunchgrass	SS40	Subalpine sagebrush
Subalpine bunchgrass	GS10	Subalpine grassland

Appendix 2

Stratification for Vegetation Resource Inventory[1]

[1] Status as of 11/21/88



Discussion—In 1988, the Pacific Northwest Regional Office finalized a complete revision of timber inventory. It was expanded to include information on other characteristics of forest stands, such as dead and down woody material, snags, and identification of old growth. It also was designed to identify all areas of a National Forest whether or not they were forested. In addition, the sampling system was changed from a systematic grid to stratified sampling on a premapped base.

The Region's ecology program cooperated in developing 119 response units (mapping units) to meet specific inventory objectives. Important objectives were (1) similarity in species dominance; (2) similarity in environmental characteristics, such as hot and dry or cold and wet; (3) similarity in management opportunities or limitations—i.e., regeneration problems; (4) similarity in productivity within rather broad classes; and (5) characterization of nonforested resources.

The stratification is broadly subdivided into nonforested association groups and forested association groups. The nonforested strata are further subdivided by life-form as grasslands, meadows, and shrublands. Occurrence of nonforested types is noted as above, within, or below the forest zone with its tree growing environment. "Above" is a subalpine or alpine environment. "Within" the forest zone indicates that soil or topography, or both, are not conducive to tree establishment and growth resulting in nonforest potential natural communities. "Below" means the climate is not conducive to tree growth. The forested strata are subdivided into tree series. The series is a taxonomic level of a classification representing groups of associations having the same climax tree species.

Associations are grouped in each of the series according to similarity in species composition, environmental indicators, or management significance. Each association group (or response unit) is identified with a bold face label and a four-digit ecoclass mapping code. Beneath each boldface label and mapping code is a paragraph describing the broad characteristics of the response unit.

Following the response unit description are three columns of information identifying the plant associations comprising that response unit. The left column lists the plant associations in scientific abbreviation. A slash (/) separates species of different life-forms (trees/shrubs/herbs) and a hyphen (-) separates species of the same life-form. The center column lists the specific ecoclass code for the individual plant association. The right column lists abbreviations for the National Forests where the association can be found.[2]

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[2] List of National Forests with their abbreviation:

DES = Deschutes	COL = Colville
FRE = Fremont	GIP = Gifford Pinchot
MAL = Malheur	MBS = Mount Baker-Snoqualimie
MTH = Mount Hood	OCH = Ochoco
OKA = Okanogan	OLY = Olympic
ROR = Rogue River	SIS = Siskiyou
SIU = Siuslaw	UMA = Umatilla
UMP = Umpqua	WAW = Wallowa-Whitman
WEN = Wenatchee	WIL = Willamette
WIN = Winema	

Nonforest vegetation stratification—

Grasslands

Plant association	Ecoclass	National Forest
GREEN FESCUE	**(GS11)**	

Xeric grasslands above the forest zone are dominated by green fescue (FEVI) and occur at high elevations in the Cascade Range and Wallowa Mountains; nonforested peaks in the Blue Mountains are dominated by Idaho fescue (FEID). Soils are generally well drained and warm but with opportunity for frost at any time during the growing season.

FEVI-CAHO	GS11 11	WAW
FEVI-LULA2	GS11 12	WAW
FEVI-GRASS	GS11	UMP
FEID (alpine)	GS12 11	OCH, MAL, UMA, WAW
IDAHO FESCUE	**(GB50)**	

Associations within and below the forest zone dominated by Idaho fescue (FEID), with bluebunch wheatgrass (AGSP), prairie junegrass (KOCR), elk sedge (CAGE), one-spike oatgrass (DAIN) as codominants or subordinates. Xeric grasslands with shallow to moderately deep, often stony soils and occurring on gentle to very steep slopes with a north or east aspect.

FEID-KOCR (ridge)	GB59 11	WAW, UMA
FEID-KOCR (mound)	GB59 12	WAW, UMA
FEID-KOCR (high)	GB59 19	WAW
FEID-KOCR (low)	GB59 14	WAW
FEID-AGSP (ridge)	GB59 15	WAW
FEID-AGSP/LUSE	GB59 16	WAW
FEID-AGSP/BASA	GB59 17	WAW
FEID-AGSP/PHCO2	GB59 18	WAW
FEID-CAHO	GB59 21	WAW
FEID-CAGE	GB59 22	WAW
FEID-DAIN-CAREX	GB59 20	WAW
ASGP-FEID (deep-gentle)	GB49 12	OCH, MAL, UMA, WAW
AGSP-FEID (deep-steep)	GB49 14	OCH, MAL, UMA, WAW
FEID-SYAL/KOCR	GB59 19	WAW
BLUEBUNCH WHEATGRASS	**(GB41)**	

Xeric grasslands within and below the forest zone dominated by bluebunch wheatgrass (AGSP), often associated with Sandberg bluegrass (POSA3). Soils are well drained, stony. Slopes are gentle to steep, often facing southeasterly to westerly.

AGSP/ERHE	GB41 11	WAW
AGSP-POSA3/SCAN	GB41 12	WAW
AGSP-POSA3 (basalt)	GB41 13	WAW
AGSP-POSA3/ASCU4	GB41 14	WAW
AGSP-POSA3/ERPU	GB41 15	WAW

AGSP-POSA3 (granite)	GB41 16	WAW
AGSP-POSA3/PHCO2	GB41 17	WAW
AGSP-POSA3/OPPO	GB41 18	WAW
AGSP-POSA3 (shallow-steep)	GB49 13	OCH, MAL, UMA

SANDBERG BLUEGRASS (GB90)

Grasslands within the forest zone dominated by Sandberg bluegrass (POSA3), which occurs on shallow, often stony soils. Soils are saturated early in growing season, drying by mid summer. Sites commonly provide spring forage for wild ungulates.

AGSP-POSA3 (shallow-gentle)	GB49 11	OCH, MAL, UMA, WAW
POSA3-DAUN	GB91 11	OCH, MAL, UMA, WAW
POSA3 SCAB-PUM	GB99	WIN, FRE, OCH, DES

ALPINE XERIC GRASSLAND (GSXX)

Xeric grasslands above the forest zone are dominated by squirreltail (SIHY) or elk sedge (CAGE), which occurs at very high elevations in the Blue and Wallowa Mountains.

SIHY	GS50	OCH, MAL, UMA, WAW
CAGE	GS39 11	OCH, MAL, UMA, WAW

SNAKE-WALLOWA GRASS-FORB (GBFX)

Xeric grasslands below the forest zone or seasonally wet environments are dominated by grasses, sedges, and forbs, which occur on terraces, rimrocks, and sideslopes of deeply incised canyons in Wallowa-Snake province.

SPCR TERRACES	GB12 11	WAW
ERCI	GB71 11	WAW
CACU SEEPS	FW39 11	WAW
LECOW RIMS	FX41 11	WAW
ERUM RIDGE	FM91 13	WAW
ERIOG-PHOR	SD93 22	WAW

MESIC GRASS-FORB (GMFX)

Associations within the forest zone occurring on moist, imperfectly drained to well-drained environments in the Cascade Range. Topography is often flat to rolling.

CACA	GM41 11	DES, WIN
ELGL	GM41 12	WIN, FRE, OCH
ELGL-BROMU	GM41 21	WIL
XETE-FERU	FM29 11	WIL
VISA-ERPE-ELGL	FM30 11	WIL

Shrublands

SHRUB SCABLANDS (SD90)

Associations within the forest zone are dominated by low sagebrush (ARAR), rigid sagebrush (ARRI), or buckwheat (ERIOG), often with Sandberg bluegrass (POSA3). Environments are hot and dry. Soils are imperfectly drained early in season owing to clay subsoils, often stony in profile and on soil surface. Used by wild ungulates as spring forage.

ARRI/POSA3	SD91 11	OCH, MAL, UMA, WAW
ERDO/POSA3	FM91 11	WAW
ERST2/POSA3	FM91 12	OCH, MAL, UMA, WAW
ERIOG FLATS (Rhyolite)	SD93 23	DES, WIN, FRE
ERIOG SCAB	SD93	WEN, OKA, COL
ARRI/POSA3-LOMA	SD91 31	OCH
ARAR/POSA3-HAST	SD92 11	FRE
ARAR/POSA3-DAUN	SD92 12	FRE, OCH

XERIC SHRUBLANDS (SDXX)

Associations within and below the forest zone are dominated by sagebrush (ARTR, ARAR), bitterbrush (PUTR), or mountain-mahogany (CELE), which is usually well drained throughout the growing season. Herbaceous layer is dominated by bluebunch wheatgrass (AGSP), Idaho fescue (FEID), squirreltail (SIHY), or elk sedge (CAGE). This group provides the bulk of the nonforest rangeland forage for domestic and wild ungulates.

ARAR/AGSP	SD19 11	OCH, MAL, WAW
ARTRV/FEID	SD29 11	OCH, MAL, WAW, UMA
ARTRV-PUTR/FEID	SD29 16	WAW
ARTRV-SYOR/BRCA	SD29 17	WAW
CELE-GRASS	SD40	OCH, MAL, UMA, WAW
CERE2/AGSP	SD56 11	UMA, WAW
GLNE/AGSP	SD65	WAW
RHGL/AGSP	SD61 21	WAW, UMA
ARAR/FEID	SD19 12	DES, WIN, FRE, OCH, MAL
ARTR/FEID-AGSP	SD29 12	DES, WIN, FRE
ARTR/SIHY (Rhyolite)	SD29 14	DES, WIN, FRE
ARTR-PUTR/FEID-AGSP	SD29 13	DES, WIN, FRE, OCH, MAL
PUTR/SIHY-CAREX	SD33 11	DES, WIN, FRE
PUTR/FEID-AGSP	SD31 11	WAW
PUTR-AGSP	SD31 12	WAW
ARTRV/CAGE	SD29 15	WAW
ARAR/FEID-SIHY	SD19 13	FRE

MESIC SHRUBLANDS **(SMXX)**

Associations often occur within the forest zone or on a topographic position that tends to accumulate subsurface moisture. Shrub layer dominated by snowberry (SYOR, SYAL) or ninebark (PHMA). Stands may have forest potential except for the reoccurrence of natural catastrophes (fires, landslide, snow deposition, frost heave).

SYOR	SM32	WAW
PERA3-SYOR	SD30	WAW
PHMA-SYAL	SM10	OCH, MAL, UMA, WAW
SYAL-ROSA	SM31 11	OCH, MAL, UMA, WAW
RHAL	SM50	DES, WIN, FRE
SHRUB BOTTOMS	SM39 11	DES, WIN, FRE, OCH
RUPA/POPH	SM59 11	WIL
ALSI (ROCK)	SM81 11	WIL
ACCI (ROCK)	SM81 12	WIL
ALIN (SNOW)	SM20	UMA, WAW
ACCI (TALUS)	NTS2 11	WIL
ARTR-ARCA/POCU	SD23 11	OCH, FRE
ALIN	SW29 11	DES, OCH, WIN, FRE
ALIN-SYAL	SW22 11	DES, OCH, WIN, FRE
ALIN-SPDO	SW22 12	DES, OCH, WIN, FRE
ALIN BANK	SW22 14	DES, OCH, WIN, FRE
SALIX/POPR	SW11 11	DES, OCH, WIN, FRE
SAEX	SW11 17	OCH
SALIX/DECA	SW11 19	DES, OCH, WIN, FRE
SPDO	SW41 13	DES, WIN

WET SHRUBLANDS **(SWXX)**

Associations often occur with riparian areas that have either standing or running water. Soils often imperfectly drained through much of the growing season. Shrubs commonly alder (ALIN), willows (SALIX, SAEX, SACO2, SABO), huckleberrys (VAOC2, VACCI, VAUL), or spirea (SPDO).

ALIN SPRINGS	SW22 13	DES, OCH, WIN, FRE
SALIX/CALA3	SW11 12	DES, OCH, WIN, FRE
SALIX/CAEU	SW11 13	DES, OCH, WIN, FRE
SALIX/CAAQ	SW11 14	DES, OCH, WIN, FRE
SALIX/CASI3	SW11 15	DES, OCH, WIN, FRE
SALIX/CARO2	SW11 16	DES, OCH, WIN, FRE
SALIX/ACCO	SW11 18	DES, OCH, WIN, FRE
SAEA/SACO2 (BOG)	SW11 20	DES, OCH, WIN, FRE
SAEA/SACO2/CASC	SW11 21	DES, OCH, WIN, FRE
SAEA-SABO/CAIN2	SW11 22	DES, OCH, WIN, FRE
CRDO	SW31 11	DES, OCH, WIN, FRE

VAOC2/CAS13	SW41 11	DES, OCH, WIN, FRE
VAOC2/ELPA2	SW41 12	DES, OCH, WIN, FRE
VACCI-SPDE/GRASS	SW41 21	WIL
SPDO-VAUL/CAREX	SW41 22	WIL
SPIRA-SALIX/CAREX	SW41 23	WIL

ALPINE SHRUBLANDS **(SSXX)**

Associations occur at high elevations in the Cascade Range, Blue or Wallowa Mountains. Soils are either imperfectly drained early in growing season or well drained. Stands occur above timberline or subalpine forest savanna.

PHEM	SS19 11	DES, WIN WAW
POPH	FS59 11	OCH, MAL, UMA, WAW
LINU TALUS	NTS1 11	WAW
ARTRS/CAGE	SS49 11	OCH, MAL, UMA, WAW
ARAR/FERU	SS49 21	FRE, WIN

Meadows

GRASS-SEDGE-FORB MEADOWS **(MDMW)**

Associations within the forest zone are dominated by grasses, sedges, rushes, or forbs without a significant shrub component. Soils are either imperfectly drained or saturated through most of growing season. Important habitat for wildlife as well as livestock forage and a component of riparian areas.

PLAYA MEADOWS	FWXX	WAW
DECA (MOIST)	MM19	OCH, MAL, UMA, WAW, WIN, FRE, DI
DECA (WET)	MW10	OCH, MAL, UMA, WAW, WIN, FRE, DI
CAREX (WET)	MW10	WAW, WEN, OKA, COL, OCH, MAL, U
POCU	MD19 11	DES, OCH, FRE, WIN
POPR	MD31 11	DES, OCH, FRE, WIN
POPR (RIDGE)	MD31 12	WAW
DECA	MM19 12	DES, OCH, FRE, WIN
DECA-CANE	MM19 11	FRE, WIN
DECA-CAREX (MOIST)	MM19 21	WAW
DECA-CAREX (WET)	MM19 22	WAW
CALA3	MM29 11	DES, OCH, FRE, WIN
CANE	MM29 12	DES, OCH, FRE, WIN
CAEU	MM29 13	DES, OCH, FRE, WIN
CAAQ	MM29 14	DES, OCH, FRE, WIN
CASI2	MM29 15	DES, OCH, FRE, WIN
CALA4	MM29 11	DES, OCH, FRE, WIN
CAREX-CABI	MM39 11	WIL
CAREX-SCIPRUS	MT19 11	WIL
CAIN3	MW19 25	DES, WIN, FRE
JUNE	MW30 11	DES, WIN, FRE

JUBA	MW39 12	DES, WIN, FRE
ELPA2	MW49 11	DES, OCH, FRE, WIN
SCMI (CAAM)	MW19 21	DES, OCH, FRE, WIN
CASI3	MW19 22	DES, OCH, FRE, WIN
CAVE	MW19 23	DES, OCH, FRE, WIN
CARO2	MW19 24	DES, OCH, FRE, WIN
ELPA	MW49 12	DES, OCH, FRE, WIN
CLUN (ALIN)	FW41 11	DES, OCH, FRE, WIN
SETR	FW42 11	DES, OCH, FRE, WIN
VERAT-HELA	FW51 11	WIL
VECA	FW51 21	WIL

SUBALPINE/ALPINE MEADOWS (MSXX)

Associations above the forest zone are dominated by sedges and occur at higher elevations within the Cascade Range. Soils are imperfectly drained early in growing season, often remaining moist well into summer. May be associated with riparian areas or interspersed along the forest savanna.

CABR	MS11 11	DES, WIN
CANI2	MS21 11	DES, WIN
CASC5-CANI2-DECE	MS21 12	DES, WIN
CASC5	MS31 11	DES, WIN

Water-covered areas (WX)

Areas are occupied by standing or running water such as estuaries, oceans, streams, lakes, and ponds. Floating or submergent vegetation may be present.

WE, WO, WR, WL

Nonvegetated areas (NX)

Areas that do not have the potential to support at least 10 percent vegetative cover. Includes avalanche paths, cinder cones, lava fields, mud flows, glacial outwash, flood plains, ice fields, landform failures, mine tailings, talus slopes, and sand dunes.

NA, NC, NF, NI, NM, NR, NS, NT

Forest-land vegetation stratification—

Western Juniper series

JUNIPER/GRASS (CJGO)

Hot, well-drained sites within or below the forest zone occurring on shallow soil. Idaho fescue (FEID) and bluebunch wheatgrass (AGSP) are major grasses with open-grown juniper and little or no shrub layer.

JUOC/FEID-AGSP	(CJG1)	WAW, UMA

JUNIPER/SHORT SHRUB (CJS1)

Hot, dry sites within and below the forest zone with shallow soils, often with desert pavement on soil surface, imperfectly drained in spring. Major shrubs are less than 20 inches in height and include low sagebrush (ARAR) and rigid sagebrush (ARRI).

Sandberg bluegrass (POSA3) and Idaho fescue (FEID) are usually herbaceous dominants. Occurs below 6,000 feet in elevation. Important early spring and winter forage for wild ungulates.

JUOC/ARAR/FEID	CJS1 12	FRE, OCH, MAL
JUOC/ARRI	CJS8 11	OCH, MAL
JUOC/ARAR	CJS1 11	OCH, MAL

JUNIPER/TALL SHRUB (CJS2)

Hot, dry sites often below and sometimes within the forest zone and having soil profiles of moderate depth, few stones, and sandy A1 and AC horizons. Sites have a potential for juniper, big sagebrush (ARTR), green rabbitbrush (CHVI), gray rabbitbrush (CHNA), oceanspray (HODU), and bitterbrush (PUTR). Crested wheatgrass (AGCR) and beardless wheatgrass (AGIN) have been introduced on some sites. Native grasses are dominated by Idaho fescue (FEID), bluebunch wheatgrass (AGSP), and Sandberg bluegrass (POSA3).

JUOC/CHNA-ARTR/AGCR	CJS2 91	OCH
JUOC/CHNA-ARTR/AGIN	CJS2 92	OCH
JUOC/ARTR/AGSP-FEID	CJS2 11	OCH
JUOC/ARTR/AGSP (FLAT)	CJS2 26	OCH
JUOC/ARTR-HODU/AGSP-FEID	CJS2 31	OCH
JUOC/ARTR-CHVI/FEID-BASA	CJS2 32	OCH
JUOC/ARTR/AGSP-POSA3	CJS2 13	OCH
JUOC/ARTR/FEID-AGSP	CJS2 12	OCH
JUOC-PIPO/PUTR/FEID	CJC1	OCH, MAL
JUOC/PUTR/BUNCHGRASS	CJS3 11	OCH, MAL, DES, FRE

Oregon White oak series

OAK/FORB (HOFO)

Hot, dry sites on the fringe between coniferous forest and valley bottom. Moisture is the most limiting characteristic. Conifers, such as ponderosa pine (PIPO) or sugar pine (PILA), are absent or sparsely present. Tree reproduction is primarily Oregon white oak (QUGA). Poison oak (RHDI), California hazel (COCOC), common yarrow (ACMI), and western strawberry (FRVEB) are the most frequently found species. Hedgehog dogtail (CYEC) is common. Shrub and herb cover are low; grass cover averages about 50 percent. Soils are shallow.

QUGA/FRVEB	HOF1	UMP

OAK/SHRUB (HOSO)

Hot, dry sites on the fringe between coniferous forest and valley bottoms where moisture is limited during most of the growing season. Douglas-fir (PSME) reproduces but has slow growth rates. Poison oak (RHDI), common snowberry (SYAL), and bitterbrush (PUTR) are indicators of hot, dry environments. Soils are shallow to moderate depth.

QUGA/RHDI	HOS1	UMP
QUGA/PUTR	HOS6	WEN, OKA
QUGA/SYAL	HOS3	WEN, OKA

Port-Orford-cedar series

PORT-ORFORD-CEDAR/SHRUB (CTS1)

Warm, moist associations limited to fog-prone stringers inland but more wide-spread on the coast. Evapotranspirational demand is low. Port-Orford-cedar (CHLA), white fir (ABCO), and Pacific yew (TABR) are primary understory components. Dwarf Oregongrape (BENE), common prince's-pine (CHUM), baldhip rose (ROGY), red huckleberry (VAPA), western twinflower (LIBOL), and swordfern (POMU) are most common. Stands are often a component of wetlands or riparian areas.

CHLA/BENE/ACTR	CTS1	SIS
CHLA/GASH	CTS2	SIS
CHLA/BENE/LIBOL	CTS1	SIS
CHLA-ACMA	CTH2	SIS

PORT-ORFORD-CEDAR/OAK (CTH1)

Cool, moist associations limited to moist ultramafic sites with low evapotranspirational demand. Huckleberry oak (QUVA) and western white pine (PIMO) are common with Port-Orford-cedar. Productivity of sites is high for ultramafic soils, generally low for the Port-Orford-cedar series.

CHLA-QUVA	CTH1	SIS
CHLA/GABU	CTS3	SIS

Tanoak series

TANOAK/EVERGREEN HUCKLEBERRY (HTS1)

Warm, moist associations in fog belt of the coastal zone. Tanoak (LIDE3) and Douglas-fir (PSME) are predominant regeneration species. Evergreen huckleberry (VAOV2), dwarf Oregongrape (BENE), salal (GASH), and Pacific rhododendron (RHMA) are common shrubs. Herbaceous cover is low. Swordfern (POMU) is the most common herbaceous plant. Productivity is the highest of the tanoak series. Shrubs provide competition for tree establishment.

LIDE3/VAOV2-GASH	HTS1	SIS
LIDE3/VAOV2	HTS1	SIS
LIDE3/RHMA	HTS2	SIS
LIDE3/RHMA-VAOV2	HTS2	SIS
LIDE3-UMCA	HTH2	SIS

TANOAK/RHODODENDRON (HTS2)

Cool, moist associations occurring above the fog belt. Sites are coastal or on the crest of the Siskiyou Mountains in southwestern Oregon. Tanoak (LIDE3) and Douglas-fir (PSME) dominate the regeneration layer. Sugar pine (PILA) and golden chinkapin (CACH) are common associates in tree layer. Salal (GASH) with dwarf Oregongrape (BENE) or Pacific rhododendron (RHMA), or both, are the principal shrubs. Beargrass (XETE) and swordfern (POMU) are common herbs. Productivity relatively high for southwest Oregon. Vegetation management is an important consideration in silvicultural prescriptions.

LIDE3/RHMA-GASH	HTS2	SIS
LIDE3/GASH	HTS3	SIS
LIDE3/GASH-RHMA	HTS3	SIS
LIDE3/GASH-BENE	HTS3	SIS
PSME/RHMA	CDS3	SIS

TANOAK/OREGONGRAPE (HTSE)

Associations in this group occur in cool, dry environments of upper elevations inland from coast and west towards Siskiyou crest in southwestern Oregon. Associations with white fir (ABCO) occur at mid elevations on cool, mesic environments. Tanoak, Douglas-fir, canyon live oak (QUCH), and golden chinkapin (CACH) are common. Shrub associates are dwarf Oregongrape (BENE), whipplevine (WHMO), prince's pine (CHUM). Common herbs include round-leaved violet (VIOR2) and swordfern (POMU). Biomass production is above average for southwest Oregon, although moisture is the limiting factor later in the growing season.

LIDE3/BENE	HTS3	SIS
LIDE3-ACCI	HTS0	SIS
LIDE3-ABCO-ACCI	HTC4	SIS
LIDE3-ABCO	HTC4	SIS

TANOAK/CANYON LIVE OAK (HTH1)

Associations occur in warm, dry environments at mid elevation inland and west towards the Siskiyou Crest in southwest Oregon. Tanoak, Douglas-fir, and sugar pine are the primary tree regeneration species. Common shrubs are a mixture of canyon live oak (QUCH), poison oak (RHUDI), whipplevine (WHMO), baldhip rose (ROGY), and dwarf Oregongrape (BENE). Swordfern (POMU) and bracken fern (PTAQ) are common herbs. Conifer regeneration establishment is difficult owing to late growing season moisture limitations and nontree vegetation competition.

LIDE3/BENE-RHDI	HTS3	SIS
LIDES3/RHDI-LOHI	HTS4	SIS
LIDE3-QUCH	HTH1	SIS
LIDE3-QUCH/BENE	HTH1	SIS

TANOAK/COFFEEBERRY (HTS5)

A tanoak association occurring inland from the coast on ultramafic parent material. California coffeeberry (RHCA), red huckleberry (VAPA), and beargrass (XETE) are common associates.

LIDE3/RHCA	HTS5	SIS

TANOAK/CONIFER (HTCO)

Associations found on sites having high atmospheric moisture and low transpirational demand. Western hemlock (TSHE) and redwood (SESE2) occur near the coast, and stands with Port-Orford-cedar (CHLA) occur inland on concavities and microsites having high moisture.

LIDE3-CHLA	HTC3	SIS
LIDE3-SESE2	HTC1	SIS
LIDE3-TSHE	HTC2	SIS

Jeffrey pine series

Associations contained within this series occur on ultramafic soils and in dry, warm environments in southwestern Oregon. Incense-cedar (CADE3) may be codominate. Sites dominated by beargrass (XETE) are dry and cool. Understories dominated by Idaho fescue (FEID), Sandberg bluegrass (POSA3), dwarf ceanothus (CEPU), and hoary manzanita (ARVI) usually indicate dry and hot environments.

JEFFREY PINE/CONIFER	**(CPCO)**	
PIJE-PSME	CPCO	SIS, UMP
JEFFREY PINE/SHRUB	**(CPSO)**	
PIJE-QUVA	CPSO	SIS
PIJE/CEPU	CPS1	SIS
JEFFREY PINE/GRASS	**(CPGO)**	
PIJE/GRASS	CPGO	SIS
PIJE/FEID	CPG1	SIS
JEFFREY PINE/FORB	**(CPFO)**	
PIJE-PIMO/XETE	CPFO	SIS

Ponderosa pine series

PONDEROSA PINE/-BUNCHGRASS **(CPG1)**

Hot sites with well-drained soils. Elevations are less than 5,500 feet. Shrubs are often very sparse to absent, with herbaceous vegetation such as Idaho fescue (FEID), bluebunch wheatgrass (AGSP), woolly wyethia (WYMO), or arrowleaf balsamroot (BASA). Spring and fall range for wild ungulates. Naturally established tree regeneration difficult to obtain without scarification.

PIPO/AGSP-BLUE	CPG1 11	OCH, MAL, WAW, UMA
PIPO/AGSP-WALLO	CPG1 32	WAW
PIPO/FEID-BLUE	CPG1 12	OCH, MAL, WAW, UMA
PIPO/FEID-WALLO	CPG1 31	WAW
PIPO/WYMO	CPF1 11	FRE
PIPO-PSME/AGSP	CDG3 11	OKA, WEN, COL
PIPO-QUGA/BASA	CPH2 11	MTH

PONDEROSA PINE/SAGEBRUSH **(CPS1)**

Hot, dry, well-drained sites occurring over a variety of topographic settings. Less than 6,000 feet in elevation, with mountain-mahogany (CELE), big sagebrush (ARTR), and bitterbrush (PUTR) being the major shrubs. Herbaceous indicators include Idaho fescue (FEID), bluebunch wheatgrass (AGSP), bottlebrush squirretail (SIHY), and Sandberg bluegrass (POSA3). Reforestation may be difficult.

PIPO/ARTR	CPS1	MAL, WAW, OCH
PIPO/PUTR-ARTR/FEID	CPS1 11	WIN, DES, FRE
PIPO/PUTR-ARTR/SIHY	CPS1 12	DES
PIPO-JUOC/CELE-ARTR/FEID	CPC2 11	FRE
PIPO/ARTR/POSA	CPS1 21	FRE

PONDEROSA PINE/BITTER-BRUSH/FESCUE (CPS3)

Mesic-tending well-drained sites with moderately deep soils. Topography flat to undulating, occasionally found on cinder cones. Major shrubs are bitterbrush (PUTR), greenleaf manzanita (ARPA), and snowbrush (CEVE). Idaho fescue (FEID) dominates herbaceous layer. Tree productivity moderate, natural regeneration difficult, site scarification required for artificial regeneration. Dwarf mistletoe incidence may be common.

PIPO/PUTR/FEID	CPS2	OCH, MAL
PIPO/PUTR/FEID-PUMICE	CPS2 11	WIN, DES, FRE
PIPO/PUTR-ARPA/FEID	CPS2 17	DES, FRE
PIPO/PUTR-CEVE/FEID	CPS3 14	DES

PONDEROSA PINE/BITTER-BRUSH/GRASS (CPS2)

Hot, well-drained sites exhibiting a variety of tall shrubs. Ross' sedge (CARO), Wheeler's bluegrass (PONE), western needlegrass (STOC), and elk sedge (CAGE) represent major herbaceous plants. Elevations generally less than 5,500 feet. Natural regeneration of trees usually difficult to obtain.

PIPO/PUTR/CARO	CPS2 21	OCH, MAL
PIPO/PUTR/STOC	CPS2 12	WIN, DES, FRE
PIPO/PUTR-ARPA/STOC	CPS2 13	WIN, DES, FRE
PIPO/PUTR-CEVE/STOC	CPS3 11	WIN, DES, FRE
PIPO/PUTR/SIHY	CPS2 18	DES
PIPO/PUTR/AGSP	CPS2 16	DES, FRE
PIPO/PUTR/CAGE	CPS2	OCH, MAL
PIPO/CELE/PONE	CPS2	MAL, WAW, OCH
PIPO-QUGA/PUTR	CPH2 12	MTH

PONDEROSA PINE/SNOWBERRY (CPS5)

Mesic tall shrubs found mainly on upland sites. A variety of shrubs, such as snowberry (SYOR, SYAL), oceanspray (HODI), and ninebark (PHMA), are often present on most sites. Douglas-fir often a codominant with ponderosa pine. Pinegrass (CARU) and elk sedge (CAGE) as common herbs.

PIPO-PSME/PHMA	CDS7 11	WAW, UMA, MAL
PIPO/SYOR	CPS5	MAL, WAW
PIPO-PSME/SYAL	CDS6 11	OCH, MAL, WAW, UMA
PIPO-PSME/HODI	CDS6	MAL, WAW, UMA
PIPO/SYAL	CPS5	WEN
PIPO/SYAL-WALLO	CPS5 22	WAW
PIPO/SYAL (FLOOD)	CPS5 11	DES, WIN, FRE, OCH
PIPO/SPDO-SYAL	CPS5 12	DES, WIN, FRE
PIPO/SPBE	CPS5 23	WAW

PONDEROSA PINE/SODGRASS (CPG2)

Warm to hot, moist to dry-tending sites with well-drained soils by mid summer. Associations occur over a variety of topography from flat to over 50 percent slopes. Rhizomatous grasses or sedges, or both, predominate as elk sedge (CAGE), long-stolon sedge (CAPE), Kentucky bluegrass (POPR), or blue wildrye (ELGL). Stands may be dominated by shrubs, such as bitterbrush (PUTR) or snowbrush (CEVE).

PIPO/ELGL	CPM1 11	OCH, MAL, WAW
PIPO/CAGE	CPG2	OCH, MAL, WAW, UMA
PIPO/CARU-RES	CPG2	OCH, MAL, WAW, UMA
PIPO/CARU-ASH	CPG2	OCH, MAL, WAW, UMA
PIPO/PUTR-CEVE/CAPE	CPS3 12	DES, WIN
PIPO/PUTR/CAPE	CPS2 15	DES, WIN
PIPO/PUTR-ARPA/CAPE	CPS2 14	WIN
PIPO/CAPE-FEID-LALA	CPG2 12	DES
PIPO-POTR/POPR	CPH3 11	FRE

Douglas-fir series

DOUGLAS-FIR/SODGRASS (CDG1)

Douglas-fir (PSME) as the climax potential with rhizomatous grasses or sedges dominating the herb layer. Shrubs are uncommon or of low stature and definitely subordinate to the herbaceous layer. Pinegrass (CARU), elk sedge (CAGE), or western fescue (FEOC) dominate herb layer. Soils are well drained. Ponderosa pine (PIPO) is a common associate and may be dominant.

PSME/CARU	CDG1 31	OKA, COL, WEN
PSME/VACI	CDS8 11	OKA
PSME/VACA	CDS8 13	COL
PSME/CAGE-BLUE	CDG1 11	OCH, MAL, UMA, WAW
PSME/CARU-ASH	CDG1	OCH, MAL, UMA, WAW
PSME/CARU-RES	CDG1	OCH, MAL, UMA, WAW
PSME/CARU	CDG1 21	WAW
PSME/CAGE	CDG1 41	MTH
PSME/FEOC	CDG3 21	MTH

DOUGLAS-FIR/TALL SHRUB (CDS7)

Douglas-fir climax potential with a tall shrub (>20 inches tall) layer. Typically found on relatively hot to warm and dry sites. Common associated trees include ponderosa pine (PIPO), lodgepole pine (PICO), and western larch (LAOC). Medium to tall shrubs dominate the undergrowth, and typical species are ninebark (PHMA), mountain snowberry (SYOR), oceanspray (HODI), bitterbrush (PUTR), pachistima (PAMY), big huckleberry (VAME), and Douglas-maple (ACGL).

PSME/SYOR-O&C	CDS6 32	OKA, COL, WEN
PSME/SYOR -WALLO	CDS6 23	WAW
PSME/ARUV-PUTR	CDS6 31	OKA, WEN
PSME/PAMY-OKAN	CDS4 11	OKA

PSME/PHMA-O&C	CDS7 15	OKA, COL
PSME/PHMA-BLUE	CDS7 11	OCH, MAL, UMA, WAW
PSME/PHMA/LIBO2	CDS7 16	COL
PSME/ACGL/PHMA	CDS7 22	WAW
PSME/VAME-COLV	CDS8 14	COL
PSME/HODI/CAGE	CDS2 31	MTH
PSME/VAME	CDS8 12	WAW

DOUGLAS-FIR/LOW SHRUB (CDS6)

Douglas-fir climax potential with a low shrub (>20 inches tall) layer found on relatively warm sites. Common associated trees may include ponderosa pine (PIPO), lodgepole pine (PICO), and western larch (LAOC). Stands in the Blue Mountains may contain grand fir (ABGR). Low to medium shrubs such as common snowberry (SYAL), bearberry (ARUV), and shiny-leaf spirea (SPBE) dominate the undergrowth.

PSME/ARUV (ARNE)	CDG1 23	OKA, WEN, COL
PSME/SYAL	CDS6 33	OKA, COL, WEN
PSME/SYAL-MTH	CDS6 61	MTH
PSME/SYAL-WALLO	CDS6 22	WAW, OCH, MAL, UMA
PSME/SPBE	CDS6 34	WAW
PSME-ABCO/SYAL/LIBO	CDS6 12	DES
PSME-ABCO/SYAL/FORB	CDS6 13	DES
PSME-ABCO/SYAL/CARU	CDS6 14	DES

DOUGLAS-FIR/SHRUB, DRY (CDSD)

Hot, dry Douglas-fir associations. Douglas-fir (PSME) and ponderosa pine (PIPO) are the primary regenerating conifer species. Incense-cedar (CADE3) and sugar pine (PILA) are not uncommon. Jeffrey pine (PIJE) will be dominant on the ultrabasic parent materials. Creeping Oregongrape (BERE), Piper's Oregongrape (BEPI), dwarf Oregongrape (BENE), salal (GASH), oceanspray (HODI), whipple vine (WHMO), and poison oak (RHDI) are common. Tree productivity is low. Moisture stress occurs early in the long growing season. These associations are commonly found at lower elevations, often at the transition between the coniferous and hardwood forests.

PSME/HODI/GRASS	CDS2 12	WIL
PSME/HODI-WHMO	CDS2 13	WIL
PSME/BERE	CDS5	ROR-S
PSME/RHDI-BEPI	CDS1	SIS, ROR-S
PSME/RHDI	CDS1	SIS, ROR-S
PSME/Depauperate	CDF0	SIS, ROR-S
PSME-PIJE	CDC5	SIS, ROR-S, UMP
PSME-PIPO	CDC5	ROR-S
PSME/RHDI/CYGR	CDS1	ROR-C, UMP
PSME/RHDI/PTAQ	CDS1	UMP
PSME/ACCI/FEOC	CDS2 41	GIP

DOUGLAS-FIR/INFERTILE (CDC3)

Douglas-fir (PSME) and incense-cedar (CADE3) generally dominate the canopy, often with sugar pine (PILA) and other dry site species. Incense-cedar or Douglas-fir, or both, regenerate in most stands. Rhododendron (RHMA) and other evergreen shrubs form a dense understory. Herbaceous species are present but not abundant. Soils are generally stony, shallow, excessively well drained, and low in nitrogen. Reforestation can be difficult owing to shrub competition, drought, and heat. Tree growth is moderate to slow once trees are established.

PSME-TSHE/RHMA	CDC7 12	WIL
PSME-CADE3-PILA	CDC3	UMP

DOUGLAS-FIR/TANOAK (CDH1)

Coastal rain shadow, inland types with tanoak (LIDE3) abundantly associated with Douglas-fir regeneration. Canyon live oak (QUCH) and Pacific madrone (ARME) cooccur in understory. Baldhip rose (ROGY), dwarf Oregongrape (BENE), and California hazel (COCOC) are common shrubs; swordfern (POMU) and bracken (PTAQ) are common herbs. Environment is warm and dry. Tanoak and canyon live oak make vegetation management an important consideration.

PSME-LIDE3/GASH	CDH1	SIS
PSME-LIDE3-PILA	CDH1	SIS
PSME-LIDE3/RHDI	CDH1	SIS
PSME-LIDE3	CDH1	SIS
LIDE3-QUCH	CDH5	SIS

DOUGLAS-FIR/WHITE FIR (CDC4)

Cool, dry associations on south aspects of high-elevation inland Siskiyou Mountains. White fir (ABCO) is a common and abundant associate with Douglas-fir (PSME). Creambush oceanspray (HODI) and baldhip rose (ROGY) are dominate shrubs. Productivity is high for Douglas-fir series. Vegetation management is not as necessary here as in other groups. Moisture is often limiting in mid to late growing season.

PSME-ABCO-PIJE	CDC4	SIS, ROR-S
PSME-ABCO	CDC4	SIS, ROR-S
PSME-ABCO-PIPO	CDC4	SIS, ROR-S
PSME-ABCO/HODI	CDC4	SIS, ROR-S
PSME-ABCO/BENE	CDC4	SIS, ROR-S

DOUGLAS-FIR/EVERGREEN SHRUB (CDS5)

Douglas-fir (PSME), incense-cedar (CADE3), sugar pine (PILA), and occasionally ponderosa pine (PIPO) form the overstory. Stands in the Olympic Peninsula dominated by Douglas-fir with some grand fir (ABGR). Understories consist of oceanspray (HODI), poison oak (RHDI) and other dry site-indicating species with dwarf Oregongrape (BENE), and salal (GASH). Soils can be either steep and rocky, shallow, or deep clay. Summer drought is pronounced. Tree growth is slow to moderate. Reforestation can be difficult owing to heat and drought. Wildlife use for winter range is often high.

PSME/HODI-ROGY	CDS2 21	OLY
PSME/HODI-BENE	CDS2 11	WIL
PSME/SYMO	CDS6 41	WIL
PSME/GASH	CDS2 55	OLY
PSME/BENE/POMU	CDS5	UMP
PSME/GASH/POMU	CDS5	UMP

DOUGLAS-FIR/BEARBERRY (CDSO)

Associations having Douglas-fir (PSME) climax potential and very open, sparse tree canopies. Hot, dry south aspects predominate with very shallow and rocky soils. The understory is dominated by bearberry (ARUV) or pinemat manzanita (ARNE), but is otherwise sparse. Timber productivity and stocking levels are very low. Regeneration following even-age harvest regimes is extremely difficult.

PSME/ARUV	CDS6 51	OLY
PSME/ARNE	CDS6 62	MTH

Grand fir-white fir series

WHITE FIR/SODGRASS (CWG1)

Associations with grand or white fir climax potential that have ground vegetation dominated by rhizomatous grasses or sedges, such as elk sedge (CAGE), long-stolon sedge (CAPE), or pinegrass (CARU). Associated trees may be Douglas-fir (PSME), ponderosa pine (PIPO), and lodgepole pine (PICO).

ABGR/CAGE	CWG1 21	WEN, MTH
ABGR/CAGE (GIP)	CWG1 22	GIP
ABGR/CARU	CWG1 23	GIP
ABGR/CARU (RESIDUAL)	CWG1 11	OCH, MAL, UMA, WAW
ABGR/CARU (ASH)	CWG1 12	OCH, MAL, UMA, WAW
ABCO-PICO/CAPE-STOC	CWC3 11	FRE
ABCO-POTR-PIPO/CAPE	CWH2 11	FRE

WHITE FIR/TALL SHRUB, MESIC (CWS5)

Associations where grand or white fir are potential climax and that have a shrub layer exceeding 20 inches in height. Environments are warm to hot, and frost or low temperatures are not limiting. Common shrubs are oceanspray (HODI), bigleaf maple (ACCI), Pacific dogwood (CONU), golden chinkapin (CACH), snowbrush (CEVE), or ninebark (PHMA). Herbs are represented by vanillaleaf (ACTR), bracken fern (PTAQ), pinegrass (CARU), or western needlegrass (STOC).

ABGR/ACCI-BEAQ/TRLA2	CWS5 35	GIP
ABGR/ACCI/ACTR	CWS5 32	MTH
ABGR/COCO2/ACTR	CWS5 36	GIP
ABGR/HODI	CWS5 31	MTH
ABGR/HODI (GP)	CWS5 34	GIP
ABGR/CONU/ACTR	CWS5 37	GIP
ABGR/CACH	CWS5 33	MTH
ABGR/ACGL	CWS9 12	WAW

ABGR/ACGL-PHMA	CWS4 12	WAW
ABGR/ACCI	CWS5	WEN
ABGR/PHMA	CWS7 22	COL
ABCO-PIPO-PILA/ARPA	CWC4 12	FRE
ABCO/CACH-PAMY/CHUM	CWH1 12	WIN
ABCO-PSME/CEVE-CACH/PTAQ	CWC2 11	FRE
ABCO-PSME/CEVE-CACH/CARU	CWC2 12	FRE
ABCO/CEVE/CAPE-PTAQ	CWC2 13	FRE
ABCO-PSME/CEVE/PTAQ	CWC2 15	FRE
ABCO/CEVE-CACH/STOC	CWH1 11	DES, FRE, WIN
ABCO-PIPO/CEVE-ARPA	CWS1 12	DES, FRE, WIN

WHITE FIR/TALL SHRUB, COOL (CWSC)

Associations where grand or white fir are potential climax and that have a shrub layer exceeding 20 inches in height. Environments are cool, and frost or low temperatures may be limiting. Common shrubs are big huckleberry (VAME), snowbrush (CEVE), greenleaf manzanita (ARPA), and western thimbleberry (RUPA). Herbs are characterized by fairybells (DIHO), twinflower (LIBO2), queencup beadlily (CLUN), strawberry (FRVI), or long-stolon sedge (CAPE).

ABGR/VAME	CWS2 11	OCH, MAL, UMA, WAW
ABGR-PIEN/VAME	CWC5	OCH, MAL, UMA, WAW
ABGR/RUPA/DIHO	CWS2 23	GIP
ABGR/VAME/LIBO2	CWS2 21	GIP
ABGR/VAME/CLUN	CWS2 22	GIP
ABGR/TABR/CLUN	CWF4 22	WAW
ABCO-PIPO/ARPA-BERE	CWS1 17	FRE
ABCO-PIPO-PIMO/RIVI	CWC4 11	FRE
ABCO/CEVE-CEPR/FRVI	CWS1 16	WIN
ABCO/ALIN (MEADOW)	CWM1 11	WIN
ABCO-PIPO-LIDE/AMAL	CWC1 11	FRE
ABCO/CEVE-ARUV	CWC2 15	WIN
ABGR/TABR	CWC8	OCH, MAL, WAW
ABCO/CEVE-ARPA/CAPE-PEEU	CWS1 13	DES, WIN
ABCO/CEVE-PUMICE	CWS1 14	DES, FRE, WIN
ABCO/CEVE/CAPE-PUMICE	CWS1 15	DES, WIN

WHITE FIR/LOW SHRUB, MESIC (CWS3)

Grand or white fir occurs as climax potential with a shrub layer generally less than 20 inches in height. Environments are warm to hot, and frost or low temperatures are not limiting. Common shrubs are pinemat manzanita (ARNE), bearberry (ARUV), spirea (SPBE), and dwarf Oregongrape (BENE).

ABGR/BENE/ACTR	CWS2 24	GIP
ABGR/SYMPH	CWS3 31	MTH
ABGR/SYMO/ACTR	CWS3 32	GIP
ABGR/SPBE	CWS3 21	WAW
ABGR/ARNE	CWS6	WEN
ABCO/ARUV	CWS5 21	WIL

WHITE FIR/LOW SHRUB, COOL (CWS8)

Grand or white fir occurs as climax potential with a shrub layer generally less than 20 inches in height. Environments are cool and frost or low temperatures may be limiting. Common shrubs are prince's pine (CHUM), grouse huckleberry (VASC), dwarf Oregongrape (BENE), and snowberry (SYAL).

ABGR/CHUM	CWF2 11	WIL
ABGR/VASC	CWS8 11	OCH, MAL, UMA
ABGR/BENE	CWS5	WEN
ABGR/VACA	CWS8 21	COL
ABCO/SYAL/FRVI	CWS3 12	WIN
ABCO-PIPO/SYAL/STJA	CWS3 13	FRE

WHITE FIR/FORB, MESIC (CWFM)

Grand or white fir occurs as climax potential with a shrub layer generally lacking and forb layer dominant. Environments are warm to hot, with frost or low temperatures not limiting. Common herbs are twinflower (LIBO2) or western starflower (TRLA2).

ABGR/LIBO2	CWF3 11	OCH, MAL, UMA, WAW
ABGR/FORB	CWF3	OCH, MAL, UMA, WAW
ABGR/TRLA2	CWF5 21	MTH
ABGR/LIBO2	CWF3 21	MTH
ABGR/ACTR	CWF5 22	MTH

WHITE FIR/FORB, COOL (CWFC)

Grand or white fir occurs as climax potential with a shrub layer generally lacking and forb layer dominant. Environments are warm to cool, with frost or low temperatures usually not limiting. Common herbs are queencup beadlily (CLUN), starry solomonplume (SMST), miterwort (MIST2), or goldthread (COCO2).

ABGR-PIEN/MIST2	CWC5	OCH, MAL, UMA, WAW
ABAM-ABGR/SMST	CFC3 11	WIL
ABGR-PIEN/SMST	CWC5 11	MTH
ABGR/POPU	CWF5 23	MTH
ABGR/CLUN-WALLO	CWF4 21	WAW
ABGR/CLUN	CWF4 11	COL
ABCO/CLUN	CWF4 31	DES, WIN, FRE
ABGR/COCO2	CWF5 11	WAW
ABCO-ABAM/BENE	CWC7	UMQ

WHITE FIR/SOUTHWESTERN OREGON, COOL-MESIC (CWH4)

Associations occur in southwest Oregon, mostly within the Cascades province on andesites and basalts at mid to high elevations. Productive sites, except where Douglas maple (ACGL) indicate rocky, wet sites. Douglas-fir dominates most stands because recent disturbance has perpetuated mid-seral stages. Vanillaleaf (ACTR) or dwarf Oregongrape (BENE) usually common ground vegetation.

ABCO/RUNI/ACTR	CWS6	UMP, ROR-C
ABCO/VAME/ACTR	CWS2	UMP, ROR-C
ABCO-ACGL/BENE	CWH4	UMP, ROR-C
ABCO-ACGL	CWH4	SIS, ROR-S

WHITE FIR-BREWER SPRUCE (CWC5)

Associations occur only in Siskiyou Mountains on cool to cold sites with shallow soils but low evaporative demand. These sites are of low tree productivity. Brewer spruce (PIBR) associated with white fir.

ABCO-PIBR/VAME	CWC5	SIS, ROR-S
ABCO-PIBR/GAOV	CWC5	SIS, ROR-S
ABCO-PIBR/CHUM	CWC5	SIS, ROR-S

WHITE FIR/SOUTHWESTERN OREGON, MESIC (CWSM)

Associations occurring in Siskiyou Mountains and Cascades on mesic sites at mid elevations. They are of average productivity. Threeleaf anemone (ANDE), western twinflower (LIBOL), or dwarf Oregongrape (BENE) are common.

ABCO/BENE-GASH	CWS2	UMP, ROR-C
ABCO/BENE/ANDE	CWS5	UMP, ROR-C
ABCO/AMAL/ANDE	CWS7	UMP, ROR-C
ABCO/COCOC-AMAL	CWS5	ROR-C
ABCO/CHUM/LIBOL	CWS2	UMP, ROR-C
ABCO/CHUM/PYROLA	CWS2	UMP, ROR-C
ABCO/HERB	CWF0	SIS, ROR-S
ABCO-PICO	CWC3	ROR-C

WHITE FIR/SOUTHWESTERN OREGON, COASTAL (CSC6)

Associations occur in coastal Siskiyou Mountains at mid to low elevations and in concavities with low evaporative demand. Sites are productive and have deep soils. Port-Orford-cedar (CHLA), tanoak (LIDE3), and vine maple (ACCI) often common.

ABCO-CHLA	CWC6	SIS
ABCO-CHLA/Depauperate	CWC6	SIS
ABCO-LIDE3	CWH3	SIS
ABCO/BENE	CWS5	SIS, ROR-S
ABCO-TABR	CWS8	SIS, ROR-S
ABCO-ACCI/ACTR	CWC5	UMP, ROR-C
ABCO-TSHE-ACCI	CWC9	UMP, ROR-C

WHITE FIR/SOUTHWESTERN OREGON, WARM-XERIC (CWC2)

Associations represent a dry, white fir group of moderate productivity and with various soil depths. Moisture is consistently the most limiting factor for survival and growth. These associations occur mostly in the Siskiyou Mountains and occasionally in the Cascades. Dwarf Oregongrape (BENE), oceanspray (HODI), or Piper's Oregongrape (BEPI) common.

ABGR/BENE	CWS5 22	WIL
ABCO-PSME	CWC2	SIS, ROR-S
ABCO-PSME/Depauperate	CWC2	SIS, ROR-S
ABCO-PSME/HODI	CWC2	SIS, ROR-S
ABCO-PSME/BENE	CWC2	SIS, ROR-S
ABCO-CADE3/BENE	CWC1	UMP, ROR-C
ABCO-PSME/BEPI	CWC2	UMP, ROR-C

WHITE FIR/SOUTHWESTERN OREGON, HOT-XERIC (CWS6)

Associations that occur on hot, dry environments at lower elevations or on ridgetops and shallow soils at mid elevations. Stands generally indicate potential low volume production. Creeping snowberry (SYMO) or poison oak (RHDI) are diagnostic indicators.

ABCO-PIPO	CWC2	SIS, ROR-S
ABCO/SYMO	CWS3	SIS, ROR-S
ABCO/RHDI	CWS9	UMP, ROR-C

Lodgepole pine series

LODGEPOLE PINE/GRASS, XERIC (CLG4)

Climax lodgepole pine (PICO) on xeric pumice soils of Mount Mazama origin. Topography is undulating to flat. Shrub layer usually absent and ground vegetation dominated by grasses, sedges, or forbs. Cold air ponding and frost heaving possible any night during growing season. Artificial regeneration difficult to achieve with any species other than lodgepole pine. Pocket gophers common in stands dominated by long-stolon sedge (CAPE) or lupine (LULA). This strata includes the least productive of the climax lodgepole pine associations.

PICO/STOC (BASINS)	CLG3 11	DES, WIN, FRE
PICO/STOC-CAPE (BASINS)	CLG4 13	DES, WIN
PICO/CAPE-LULA	CLG4 11	DES, WIN
PICO/CAPE-LULA-PEEU	CLG4 12	DES
PICO/SIHY-CAPE	CLG4 13	FRE
PICO/STOC-LUCA	CLG3 14	WIN, FRE
PICO/EXTE	CLM4 11	DES, WIN

LODGEPOLE PINE-WHITE- BARK PINE **(CLCO)**

Climax lodgepole pine (PICO) associations occurring above 6,400 feet elevation in the Fremont National Forest. Shrub layer is usually absent. Ground vegetation is dominated by Wheeler bluegrass (POWH) and long-stolon sedge (CAPE) or by forbs such as King's sandwort (ARKI) and gay penstemon (PELA). Regeneration is difficult to establish. Tree productivity is potentially low.

PICO-PIAL/PELA	CLC1 11	FRE
PICO-PIAL/PIMO/ARKI	CLC1 12	FRE

LODGEPOLE PINE/WETLAND **(CLM1)**

Climax lodgepole pine (PICO) associations occur on mesic pumice environments or volcanic ash soils. Topography is usually flat to concave. Ground vegetation is dominated by shrubs, grasses, or sedges that tolerate high water tables or seasonal ponding. The lower to bottom slope positions accumulate cold air. Tree productivity can be some of highest for climax lodgepole pine sites. Seasonal high water tables provide a constraint on operability of machinery. Associations often are components of riparian areas and have high value as wildlife habitat for wild ungulates, raptors, and upland game birds.

PICO/SEDGE (WETLAND)	CLM1 11	DES, WIN, FRE
PICO/FORB	CLF1 11	WIN
PICO-POTR/FRVI	CLH1 11	FRE
PICO/CARZ (WETLAND)	CLM1	OCH, MAL, UMA
PICO/POPR	CLM1 12	DES, FRE, WIN, OCH
PICO/CAEU	CLM1 13	DES, FRE, WIN
PICO/CAAQ	CLM1 14	FRE, OCH
PICO/DECA	CLM1 15	DES, FRE, WIN
PICO/VAOC2/CAEU	CLM3 12	DES, FRE, WIN
PICO/SPDO/FORB	CLM3 13	DES, FRE, WIN
PICO/SPDO/CAEU	CLM3 14	DES, FRE, WIN
PICO-PIEN/ELPA2	CLM2 11	DES, WIN, FRE, OCH

LODGEPOLE PINE/SHRUB, WARM-XERIC **(CLS2)**

Climax lodgepole pine (PICO) associations occurring at low to mid elevations within the pumice deposition zone of Mount Mazama. Soils are well drained. Topography is flat to undulating basins and plateaus. Stands characterized by a shrub layer composed of bitterbrush (PUTR) or big sagebrush (ARTR). Herbaceous layer dominated by Idaho fescue (FEID), western needlegrass (STOC), or long-stolon sedge (CAPE). Cold air ponding and frost heaving can occur any night during the growing season. Mid-day growing temperatures warm to hot. Regeneration is most often restricted to lodgepole pine. Site scarification may be necessary to reduce fescue or sedge competition. Tree productivity ranges from low to moderate.

PICO/ARTR (RHYOLITE)	CLS1 12	DES
PICO/PUTR (RHYOLITE)	CLS2 16	DES
PICO/ARTR/FEID	CLS1 11	DES
PICO/PUTR/FEID	CLS2 14	DES, FRE, WIN

PICO/FRVI-FEID	CLG3 15	FRE
PICO/PUTR/STOC	CLS2 11	DES, FRE, WIN
PICO/RICE-PUTR/STOC	CLS2 15	DES, WIN
PICO/PUTR/CAPE	CLS2 12	DES, WIN

LODGEPOLE PINE/SHRUB, COOL-XERIC (CLS4)

Climax lodgepole pine (PICO) associations occur at upper elevations within south-central Oregon and the Blue Mountains. Soils are well drained. Topography is undulating to steep, plateaus and mountain slopes. Stands characterized by a shrub layer composed of linanthastrum (LINU), pinemat manzanita (ARNE), or grouse huckleberry (VASC). Herbaceous layer is dominated by pinegrass (CARU), western needlegrass (STOC), or long-stolon sedge (CAPE). Cold air ponding and frost heaving can occur any night during the growing season. Mid-day growing temperatures cool to warm. Regeneration is restricted to lodgepole pine and artificial establishment difficult. Tree productivity ranges from low to moderate.

PICO/STOC-LUCA-LINU	CLG3 13	DES
PICO/VASC	CLS4 12	DES, WIN, FRE
PICO/VASC/CAPE	CLS4 14	WIN
PICO/CARU-VASC	CLG2 11	OCH, MAL, UMA, WAW
PICO/ARNE	CLS3 11	DES, WIN UMP

LODGEPOLE PINE/SHRUB, MOIST (CLSM)

Climax lodgepole pine (PICO) occurring on seasonally high water tables within south-central Oregon pumice deposition zone. Topography is gentle, undulating to flat. Shrub layer is characterized by bearberry (ARUV), bitterbrush (PUTR), or huckleberries (VACA, VADE). Herbaceous layer has mesic-tending grasses and forbs, with wetland sedges on huckleberry sites. Pocket gophers usually common on bearberry and bitterbrush sites. Natural regeneration is not difficult to establish under a shelterwood. Stands are important as wildlife habitat for wild ungulates, raptors, and gamebirds.

PICO/ARUV-PUM	CLM2 11	DES, WIN, FRE
PICO/PUTR/FORB	CLS2 13	DES, WIN, FRE
PICO/VACA (Wetland)	CLM3 11	DES, WIN, FRE
PICO/VACA/FORB	CLS4 13	WIN

Sitka spruce series

SITKA SPRUCE/SHRUB (CSS5)

Sitka spruce (PISI) and western hemlock (TSHE) dominate, occasionally with Douglas-fir (PSME) in the canopy. Salmonberry (RUSP), devil's club (OPHO), or salal (GASH) dominate a shrub layer, often with abundant herbaceous species. Cool, moist sites near the ocean with moderately deep to deep soils. Rainfall abundant, snow uncommon. Soils may be poorly drained, especially if devil's club is abundant. Reforestation can be difficult due to shrub competition. Tree growth is potentially good to excellent. Associations often occur as a component of riparian areas.

PISI/GASH	CSS3 21	SIU

PISI/RUSP	CSS5 21	SIU
PISI/RUSP-GASH	CSS5 22	SIU
PISI/OPHO	CSS6 21	SIU

SITKA SPRUCE/SWORDFERN (CSF1)

Sitka spruce (PISI) and western hemlock (TSHE) dominate, occasionally with Douglas-fir (PSME) in the canopy. Understory is herb rich, usually without a dense shrub layer. Swordfern (POMU) and oxalis (OXOR) are common in the herb layer. Cool, moist sites near the ocean with deep, rich soils. Rainfall abundant, snow uncommon. Reforestation is generally easy to direct to where overstocking may be common. Tree growth is good to excellent. Associations often are a component of riparian areas.

PISI/POMU-OXOR	CSF1 11	OLY
PISI/POMU	CSF1 21	SIU
PISI/OXOR	CSF3 21	SIU
PISI/MEFE-VAPA	CSS2 21	SIU

Western redcedar series

RED CEDAR/FORB (CCF2)

Western redcedar (THPL) is the climax dominant. Douglas-fir (PSME), western larch (LAOC), grand fir (ABGR), and lodgepole pine (PICO) may be locally common. Mid successional stages often are dominated by grand fir (ABGR) and Douglas-fir (PSME). Seral shrubs are common, especially after burning and may hinder reforestation. Tree growth, once established, is moderate to good. Associations occur on well-drained soils on upland sites and on lower slope positions.

THPL/CLUN	CCF2 21	COL
THPL/ARNU3	CCF2 22	COL
THPL/VAME	CCS3 11	COL
THPL-ABGR/ACTR	CCF2 11	MTH
THPL/ACTR	CCF2 12	GIP

RED CEDAR/DEVIL'S CLUB (CCS2)

Western redcedar (THPL) or western hemlock (TSHE) is climax potential. Grand fir (ABGR) may dominate midsuccessional stands with better moisture drainage. Other associated conifers may include Douglas-fir (PSME) and Engelmann spruce (PIEN). Ladyfern (ATFI) or other ferns may be abundant under the shrub layer of devil's club (OPHO). Associations occur on wet, swampy sites in bottoms or on a perched water table. Sites are very wet, often with standing water. Reforestation is often difficult to achieve owing to seasonally high water tables. Tree growth is moderate.

THPL/OPHO	CCS2 11	COL, OKA
THPL-ABGR/OPHO	CCS2 21	GIP

Western hemlock series

WESTERN HEMLOCK/ RHODODENDRON-SALAL (CHS3)

Western hemlock (TSHE) and Douglas-fir (PSME) occur as major tree species. Western redcedar (THPL) and other conifers may be codominants or subordinates. Pacific rhododendron (RHMA), dwarf Oregongrape (BENE), salal (GASH), and other evergreen shrubs are common. Ground vegetation is generally herb poor; beargrass (XETE) is not common. Warm to cool sites without persistent snowpack. Soils generally stony and nutrient poor. Reforestation is not difficult to achieve and tree growth, once established, is moderate.

TSHE/RHMA-BENE	CHS3 21	SIU
TSHE/RHMA-GASH	CHS3 22	SIU
TSHE/RHMA-VAOV2	CHS3 24	SIU
TSHE/RHMA-GASH	CHS3 27	MTH
TSHE/RHMA-BENE	CHS3 28	MTH
TSHE/RHMA-GASH	CHS3 51	WIL
TSHE/RHMA-BENE	CHS3 52	WIL
TSHE/RHMA/LIBO2	CHS3 55	WIL
THPL-TSHE/WHMO	CCC2	UMP
THPL-TSHE/RHMA	CCC2	UMP
TSHE-ABCO	CHC3	SIS
TSHE-CADE3/GASH	CHC6	UMP
TSHE-CADE3/RHMA/CLUN	CHC6	UMP
TSHE-TABR/RHMA	CHC9	UMP, ROR-C
TSHE-THPL/RHMA	CHC4	UMP
TSHE-THPL/PSME	CHC4	UMP
TSHE-THPL (high elev.)	CHC4	SIS
TSHE/GASH	CHS1	SIS
TSHE/RHMA	CHS3	SIS
TSHE/RHMA/LIBOL	CHS3	UMP, ROR-C
TSHE-QUSA	CHH5	SIS
TSHE-CACH-RHMA	CHH3	UMP

WESTERN HEMLOCK/SHRUB, MOIST (CHS4)

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL), are in the tree canopy. Salmonberry (RUSP) and devil's club (OPHO) are common. Skunk cabbage (LYAM), oxalis (OXOR) and swordfern (POMU) may be present. Warm to cool, moist to wet sites with poorly drained soils or abundant moisture, often a component of riparian areas. Snowpacks are temporary. Reforestation may be difficult due to competition from shrubs. Tree growth is moderate to excellent, once trees become established.

TSHE/ATFI	CHF4 21	GIP
TSHE/LYAM	CHM1 21	MTH, GIP
TSHE/LYAM-OLY	CHM2 11	MBS, OLY

TSHE/RUSP	CHS4 21	SIU
TSHE/RUSP-ACCI	CHS4 22	SIU
TSHE/RUSP-GASH	CHS4 23	SIU
TSHE/RUPE	CHS4 11	COL
TSHE/OPHO	CHS5 11	WIL
TSHE/OPHO	CHS5 12	OLY, MBS
TSHE/OPHO	CHS5 21	SIU
TSHE/OPHO/OXOR	CHS5 22	MTH
TSHE/OPHO/SMST	CHS5 23	MTH
TSHE/OPHO/POMU	CHS5 24	GIP
TSHE/VAAL-OPHO	CHS6 11	MTH
TSHE-ACCI/ALRU	CHS2	ROR-C, UMP

WESTERN HEMLOCK/SALAL-OREGONGRAPE (CHS1)

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL), are in tree canopy. Dwarf Oregongrape (BENE) or salal (GASH), or both, with swordfern (POMU) common in understory. Alaska huckleberry (VAAL) common on some sites. Relatively warm sites with well-drained but not excessively dry soils. Reforestation is not difficult to establish; potential tree growth moderate.

TSHE/LIBO2	CHF3 21	WIL
TSHE/GASH-WILL	CHS1 11	WIL
TSHE/BENE-COAST	CHS1 21	SIU
TSHE/BENE-GASH	CHS1 22	SIU
TSHE/GASH-COAST	CHS1 23	SIU
TSHE/BENE-GASH	CHS1 24	WIL
TSHE/BENE	CHS1 25	WIL, GIP, MTH
TSHE/BENE/POMU	CHS1 26	MTH, GIP
TSHE/GASH/POMU	CHS1 37	OLY, MBS
TSHE/BENE/POMU-OLY	CHS1 39	OLY, MBS
TSHE/ACCI-GASH	CHS2 21	SIU
TSHE/RHMA/POMU	CHS3 23	SIU
TSHE/VAOV2	CHS6 10	SIU
TSHE/VAAL-GASH	CHS6 14	MTH, GIP
TSHE/VAAL	CHS6 21	OLY
TSHE/VAAL-GASH	CHS6 24	OLY, MBS
TSHE-THPL/BENE	CHC4	UMP
TSHE-THPL-CONU	CHC4	UMP
TSHE-THPL/RUNI	CHC4	UMP
TSHE/GASH/HIAL	CHS1	UMP
TSHE/GASH/LIBOL	CHS1	UMP
TSHE/BENE/LIBOL	CHS1	UMP, ROR-C
TSHE/GASH-VAOV2	CHS1 33	SIU, OLY

WESTERN HEMLOCK/SWORD-FERN-OXALIS **(CHF1)**

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL) and other species, are in the tree canopy. Herbaceous layer has one or more of the following moist-site indicators: oxalis (OXOR), swordfern (POMU), foam flower (TITR), and vanillaleaf (ACTR). Warm sites with deep, rich soils that are moist much of the growing season. Reforestation is not difficult to establish, and trees grow very well, once established.

TSHE/OXOR-WIL	CHF1 11	WIL
TSHE/OXOR-OLY	CHF1 12	OLY
TSHE/OXOR-COAST	CHF1 21	SIU
TSHE/POMU	CHF1 22	SIU
TSHE/POMU-OXOR	CHF1 24	MTH, GIP
TSHE/POMU-GIP	CHF1 25	GIP
TSHE/POMU-OXOR-OLY	CHF1 31	OLY
TSHE/POMU-TITR	CHF1 32	OLY, MBS
TSHE/POMU-WIL	CHF1 51	WIL
TSHE/TITR	CHF2 22	GIP
TSHE/ACCI/POMU	CHS2 22	SIU
TSHE-CHLA	CHC1	SIS
TSHE-THPL	CHC4	SIS
TSHE-UMCA	CHH1	SIS

WESTERN HEMLOCK/FORB, MOIST **(CHF3)**

Western hemlock (TSHE), Douglas-fir (PSME), grand fir (ABGR), and western redcedar (THPL) are in the canopy. Herb-rich ground vegetation has moist-site indicators as queencup beadlily (CLUN), vanillaleaf (ACTR), and wild sasparilla (ARNU3). Warm, moist sites with relatively deep, rich soils. Reforestation is not difficult to establish, and trees grow very well, once established.

TSHE/CLUN	CHF3 11	COL
TSHE/ARNU3	CHF3 12	COL
TSHE/GYDR	CHF4 22	COL
TSHE-ABGR/CLUN	CHC3 11	MTH

WESTERN HEMLOCK/-RHODODENDRON, COOL **(CHSC)**

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL), are in the tree canopy. Pacific rhododendron (RHMA) or Alaska huckleberry (VAAL), or both, with swordfern (POMU), oxalis (OXOR), dogwood bunchberry (COCA), or twinflower (LIBO2) common in understory. Fool's huckleberry (MEFE) occurs on some sites east of the Cascades. Warm to cool sites with some winter snowpack. Soils well drained but not droughty, often nutrient limited. Reforestation is relatively easy to establish; tree growth moderate to good.

TSHE/RHMA-VAAL/COCA	CHS3 26	MTH, WIL
TSHE/RHMA/POMU	CHS3 35	OLY
TSHE/RHMA/OXOR	CHS3 54	WIL
TSHE/RHMA/LIBO2	CHS3 55	WIL
TSHE/VAAL/COCA	CHS6 15	MTH, GIP, WIL
TSHE/MEFE	CHS7 11	COL

WESTERN HEMLOCK/FORB, DRY (CHF2)

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL), are in tree canopy. Pacific silver fir (ABAM) can occur on Olympic Peninsula. Herb-rich understory, especially with vanillaleaf (ACTR) and swordfern (POMU). Dwarf Oregongrape (BENE) is common. Warm to cool sites without persistent snowpacks. Soils are deep, often stony, slightly droughty and productive. Reforestation can be moderately difficult to establish. Tree growth potential good to moderate, once established.

TSHE-PIMO/VAME	CHC9	UMP, ROR-C
TSHE/POMU-MTH	CHF1 23	MTH
TSHE/ACTR-OLY	CHF2 11	OLY
TSHE/ACTR	CHF2 21	MTH, GIP, WIL
TSHE/BENE/ACTR	CHS1 14	WIL, ROR-C

WESTERN HEMLOCK/ RHODODENDRON, MESIC (CHSM)

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPS), occur in the tree canopy. Rhododendron (RHMA) is the most common shrub but is replaced on some sites by Alaska huckleberry (VAAL), big huckleberry (VAME), or salal (GASH). Dwarf Oregongrape (BENE) or oceanspray (HODI) occurs on some sites. Beargrass (XETE) is common. Warm to cool, relatively dry sites without persistent snowpacks. Soils usually stony, often shallow, and nutrient limited. Reforestation is moderately difficult to establish. Tree growth is poor to moderate, once established.

TSHE/XETE-COL	CHF5 21	COL
TSHE/XETE-OLY	CHF5 11	MBS, OLY
TSHE/GASH/XETE	CHS1 32	OLY, MBS
TSHE/GASH-HODI	CHS1 34	OLY, MBS
TSHE/RHMA/XETE-MTH	CHS3 25	MTH
TSHE/RHMA/XETE-OLY	CHS3 32	OLY
TSHE/RHMA/XETE-WIL	CHS3 53	WIL
TSHE/RHMA-OLY	CHS3 31	OLY
TSHE/RHMA-BENE-OLY	CHS3 33	OLY
TSHE/RHMA-GASH-OLY	CHS3 34	OLY
TSHE/VAME/XETE	CHS6 12	MTH
TSHE/VAAL/XETE	CHS6 22	OLY

WESTERN HEMLOCK/SALAL-OREGONGRAPE, DRY (CHSD)

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL), are in the tree layer. Dwarf Oregongrape (BENE) or salal (GASH) is in the understory. Swordfern (POMU) is neither common nor absent. Warm, relatively dry sites with moderately deep, somewhat stony soils. Reforestation can be moderately difficult to establish. The potential tree growth is moderate.

PSME-TSHE/BENE	CDC7 11	WIL
PSME-TSHE/GASH	CDC7 13	WIL
TSHE/Depauperate	CHF9 11	OLY, MBS
TSHE/GASH-GIP	CHS1 28	GIP
TSHE/GASH-OLY	CHS1 31	OLY, MBS
TSHE/GASH-BENE	CHS1 35	OLY, MBS
TSHE/BENE-OLY	CHS1 38	OLY, MBS
TSHE/BENE	CHS1	WEN
TSHE-ACGL/SMST	CHS2	ROR-C

WESTERN HEMLOCK/SHRUB, DRY (CHC2)

Associations in which western hemlock (TSHE) is codominate with Douglas-fir (PSME). Vine maple (ACCI), dogwood (CONU), madrone (ARME) and oceanspray (HODI) are common in shrub layer. Vanillaleaf (ACTR) is usually common in herbaceous layer. Environments are warm and dry. Tree regeneration may be difficult to establish.

TSHE-PSME/HODI	CHC2 12	MTH, GIP
TSHE-PSME-ARME	CHC2 13	GIP
TSHE-ACCI/ACTR	CHS2 23	MTH
TSHE-CONU/ACTR	CHS2 24	GIP
TSHE/BENE-GASH-GIP	CHS1 27	GIP
TSHE/ACCI	CHS2	WEN

WESTERN HEMLOCK/SHRUB-OXALIS (CHSF)

Western hemlock (TSHE) and Douglas-fir (PSME), often with western redcedar (THPL), occur in the tree layer. Very little Douglas-fir occurs in stands on the Olympic Peninsula unless planted. The understory has oxalis (OXOR) with salal (GASH), dwarf Oregongrape (BENE), Alaska huckleberry (VAAL), or big huckleberry (VAME). Warm to cool sites without persistent snowpacks. Soils are moderately deep, rich and moist. Regeneration is generally easy to establish. Sites have some of the best potential for tree growth.

TSHE-THPL/OXOR	CHC4	UMP
TSHE/GASH/OXOR	CHS1 36	OLY
TSHE/GASH/OXOR	CHS1	UMP
TSHE/VAAL/OXOR	CHS6 13	MTH, GIP

TSHE/VAAL/OXOR-OLY	CHS6 23	OLY
TSHE/VAME/OXOR	CHS6	UMP
TSHE/BENE/OXOR	CHS1	UMP
TSHE/BENE/OXOR	CHS1 13	WIL

Pacific silver fir series

SILVER FIR/SALAL-OREGONGRAPE (CFS1)

Pacific silver fir (ABAM), Douglas-fir (PSME), western hemlock (TSHE), and western redcedar (THPL) occur in tree layer. Dwarf Oregongrape (BENE) or salal (GASH) is the dominant shrub layer. Herbaceous layer is not usually conspicuous. Cool sites with a winter snowpack and relatively dry, well-drained soils. Reforestation is relatively easy to establish, and trees grow moderately, once established.

ABAM/BENE	CFS1	MBS
ABAM/BENE	CFS1 51	GIP, MTH, WIL
ABAM/GASH-GIP	CFS1 52	GIP
ABAM/GASH-OLY	CFS1 54	OLY, MBS
ABAM/Depauperate	CFS9 11	OLY
ABAM/BENE-LIBO2	CFS1	OKA, WEN
ABAM/GASH	CFS1	MBS

SILVER FIR/FORB, MESIC (CFFM)

Pacific silver fir (ABAM) occurs with western hemlock (TSHE) and western redcedar (THPL) in tree canopy. Noble fir (ABPR) or Shasta red fir (ABMASH) and Douglas-fir (PSME) commonly occur in the southern Washington and Oregon Cascades, but not on the Olympic Peninsula. Moist-site herbs are common: foam flower (TIUN), oxalis (OXOR), vanillaleaf (ACTR), queencup beadlily (CLUN), and swordfern (POMU). Cool sites with a winter snowpack and moist, fertile soils. Reforestation is relatively easy to establish. Stands characterized by moderate to good tree growth.

ABAM/OXOR-OLY	CFF1 11	OLY
ABAM/TIUN	CFF1 52	MTH, WIL, GIP
ABAM/OXOR	CFF1 53	MTH, WIL
ABAM/ACTR-TIUN	CFF2 11	OLY
ABAM/ACTR-CLUN	CFF2 53	GIP
ABAM/POMU	CFF6 11	OLY, MBS
ABAM/POMU-OXOR	CFF6 12	OLY
ABAM-ACCI/TIUN	CFS6 51	MTH, WIL
ABAM-ACCI/TITR	CFS6	UMP
ABAM-TSHE/CLUN	CFC2	UMP
ABAM/ACCI	CFS6	WEN
ABAM/ASCA3	CFF4	WEN
ABAM/ACTR	CFF2	WEN
TSHE-ABAM/VAME	CHC5	UMP

SILVER FIR/DEVIL'S CLUB (CFS3)

Pacific silver fir (ABAM) occurs with western red cedar (THPL) and western hemlock (TSHE). Noble fir (ABPR) and Douglas-fir (PSME) occur in Washington and Oregon Cascades, but not the Olympic Peninsula. Devil's club (OPHO) and skunkcabbage (LYAM) are common shrubs. Cool sites with a winter snow pack and moist to wet soils during the growing season. Stands are often associated with riparian areas. Difficult reforestation due to high water tables, but tree growth is moderate to good.

ABAM/OPHO	CFS2 51	MTH, GIP, WIL
ABAM/OPHO-OLY	CFS3 11	OLY, MBS
ABAM LYAM	CFM1 11	OLY, MBS
ABAM/OPHO-WEN	CFS3	WEN
ABAM/LYAM	CFM1	WEN

SILVER FIR/AZALEA-MENZIEZIA (CFS5)

Pacific silver fir (ABAM), Alaska-cedar (CHNO), western hemlock (TSHE), and western redcedar (THPL) occur in overstory canopy. Noble fire (ABPR), mountain hemlock (TSME), lodgepole pine (PICO), and western white pine (PIMO) are common associates in Washington and Oregon Cascades, but not the Olympic Peninsula. Cascades azalea (RHAL), fool's huckleberry (MEFE), or Alaska huckleberry (VAAL) are in shrub layer. Cool to cold sites with deep, persistent winter snowpack. Soils are moist to wet through the growing season. Difficult reforestation and slow tree growth due to elevation and short growing seasons.

ABAM/VAAL-RHAL	CFS2 20	OLY
ABAM/RHAL/CLUN	CFS5 52	MTH, WIL
ABAM/MEFE	CFS2 54	MTH, WIL, GIP
ABAM/RHAL	CFS5 50	GIP
ABAM/RHAL/XETE	CFS5 51	MTH, WIL
ABAM/RHAL-OKA	CFS5 53	OKA, WEN
ABAM/MEFE	CFS2	WEN

SILVER FIR/SHRUB-BEARGRASS (CFF3)

Pacific silver fir (ABAM), noble fir (ABPR), lodgepole pine (PICO), and western white pine (PIMO) occur in the Oregon and Washington Cascades. Olympic Peninsula stands have subalpine fir (ABLA2), mountain hemlock (TSME), and western redcedar (THPL) as associates. Big huckleberry (VAME) and beargrass (XETE) or beargrass alone occur in understory. Stands usually are herb poor. Cool to cold sites with persistent winter snowpacks. Soils are well drained, often stony. Sites are difficult to regenerate owing to beargrass and huckleberry competition, and tree growth is slow.

ABAM/VAME/XETE	CFS2 51	MTH, WIL, GIP
ABAM/VAME/XETE-WASH	CFS2 11	OLY, MBS
ABAM/XETE	CFF3 11	OLY, MBS

SILVER FIR/RHODODENDRON (CFS6)

Pacific silver fir (ABAM), noble fir (ABPR), and western hemlock (TSHE) occur with lodgepole pine (PICO) and western white pine (PIMO) in Washington and Oregon Cascades. Stands on the Olympic Peninsula have Douglas-fir (PSME) and western hemlock (TSHE) associated with Pacific silver fir. Pacific rhododendron (RHMA) is

the prominent shrub with Alaska huckleberry (VAAL), dwarf Oregongrape (BENE), and salal (GASH). Cool sites with winter snowpacks. Soils are relatively deep, often stony, somewhat nutrient poor, but not particularly dry. Reforestation is moderately difficult to establish and tree growth is slow to moderate.

ABAM-TSHE/RHMA-GASH	CFC2 51	MTH, WIL
ABAM/RHMA-VAAL/COCA	CFS2 52	MTH, WIL
ABAM/RHMA-OLY	CFS6 11	OLY
ABAM/RHMA-VAAL	CFS6 12	OLY
ABAM/RHMA-BENE	CFS6 52	MTH, WIL

SILVER FIR/RHODODENDRON/ BEARGRASS (CFFS)

Pacific silver fir (ABAM), noble fir (ABPR), lodgepole pine (PICO), and western white pine (PIMO) occur in tree layer. Pacific rhododendron (RHMA), often with beargrass (XETE), occurs in understory. Stands are herb poor. Cool sites with winter snowpacks. Soils are shallow, stony, and nutrient poor. Sites are difficult to reforest owing to beargrass competition, and tree growth is slow.

ABAM/RHMA/XETE	CFS6 53	MTH, WIL

SILVER FIR/COASTAL (CFSF)

Pacific silver (ABAM) fir occurs with western hemlock (TSHE) and western redcedar (THPL). Shrub layer is dominated by either salal (GASH) or Alaska huckleberry (VAAL). Moist-tending herbs or ferns dominate the ground vegetation: avalanche lily (ERMO), oxalis (OXOR), or deer fern (BLSP).

ABAM/GASH/BLSP	CFS1 55	OLY
ABAM/GASH/OXOR	CFS1 56	OLY
ABAM/VAAL/OXOR	CFS2 17	OLY
ABAM/VAAL/MADI2	CFS2	MBS
ABAM/VAAL/ERMO	CFS2 13	OLY, MBS
ABAM/VAAL/TITR	CFS2 15	OLY

SILVER FIR/SHRUB, MESIC (CFSM)

Pacific silver fir (ABAM) and western hemlock (TSHE), with minor amounts of Douglas-fir (PSME) occur in tree layer. Alaska huckleberry (VAAL), with herbs, particularly dogwood bunchberry (COCA) and queencup beadlily (CLUN), occur in the understory. Cool sites with winter snowpacks. Soils are relatively deep and well watered. Reforestation is moderately difficult to establish, and tree growth, once established, is slow to moderate.

ABAM/VAAL-OLY	CFS2 12	OLY
ABAM/VAAL/CLUN	CFS2 18	OLY, MBS
ABAM/VAAL/COCA	CFS2 53	MTH, WIL
ABAM/VAAL	CFS2 57	GIP
ABAM/VAAL	CFS2	WEN

SILVER FIR/SHRUB, COOL (CFSC)

Pacific silver fir (ABAM), Douglas-fir (PSME), and western hemlock (TSHE) occur in tree layer. Noble fir (ABPR) is found in Washington and Oregon Cascades. Alaska huckleberry (VAAL) with dwarf Oregongrape (BENE) or salal (GASH) occurs in the understory. Cool sites with winter snowpacks and moderately deep, well-drained soils. Drier than the silver fir/shrub mesic group, which also has Alaska huckleberry. Reforestation moderately difficult to establish, and tree growth is slow to moderate.

ABAM/VAAL-BENE	CFS2 16	OLY
ABAM/VAAL/LIBO2	CFS2 19	OLY, MBS
ABAM/VAAL-GASH	CFS2 55	WIL, MTH, GIP
ABAM/VAAL-BENE	CFS2	MBS

SILVER FIR/SHRUB, DRY (CFSD)

Pacific silver fir (ABAM) occurs with western hemlock (TSHE) on the Olympic Peninsula, and with Douglas-fir (PSME) and noble fir (ABPR) in the Oregon and Washington Cascades. Big huckleberry (VAME), often with Alaska huckleberry (VAAL), occurs in shrub layer. Herb layer is characterized by many species, the prominent ones being queencup beadlily (CLUN) and beargrass (XETE). Cool sites with winter snowpacks. Soils are shallow and well drained, but moist early in the growing season. Reforestation is somewhat difficult, and tree growth is slow to moderate.

ABAM/VAME	CFS2	MBS
ABAM/VAAL/XETE	CFS2 14	OLY, MBS
ABAM/VAME-VAAL	CFS2	MBS
ABAM/VAME/CLUN	CFS2 56	MTH, WIL, GIP
ABAM/VAME/RULA	CFS2	UMP
ABAM/PAMY	CFS2 58	OKA, WEN

Shasta red fir series

SHASTA RED FIR/GRASS-FORB (CRF2)

Associations dominated by Shasta red fir (ABMASH) and mountain hemlock (TSME) with currant (RIBES) and pinemat manzanita (ARNE) in shrub layer.

TSME/POPU	CMF2	ROR-C, SIS
ABMAS/POPU	CRF2	ROR-C, SIS
ABMAS/SHEEP	CRF3	ROR-S
ABMAS/CAPE	CRG1 11	WIN
ABMAS/ARNE/STOC	CRS1 11	WIN
ABMAS-TSME/ARNE/CAPE	CRS1 12	WIN

SHASTA RED FIR-WHITE FIR (CRC3)

Shasta red fir (ABMAS) and white fir (ABCO) growing in codominance. Shrub layer dominated by big huckleberry (VAME), Oregongrape (BENE), currant (RIBES), rose (ROGY), creeping snowberry (SYMO), prince's pine (CHUM), or golden chinkapin (CACH).

ABMAS-CADE3	CRC1	UMP, ROR-C
ABMAS/VAME	CRS4	UMP, ROR-C

ABCO-ABMAS/CHUM	CWC7	UMP, ROR-C
ABCO-ABMAS/BENE	CWC7	UMP, ROR-C
ABCO-ABMAS/RIBES	CWC7	SIS, ROR-S
ABCO-ABMAS/ROGY	CWC7	SIS, ROR-S
ABCO-ABMAS/SYMO	CWC7	SIS, ROR-S
AMAS-ABCO/CACH-CHUM/CAPE	CRS3 11	WIN, ROR-C

SHASTA RED FIR—ALASKA-CEDAR (CRC2)

Stands dominated by Shasta red fir (ABMAS) or white fir (ABCO) with Alaska-cedar (CHNO). Environments with cold microsites occur at high elevations or on ridgetop positions.

ABMAS-CHNO	CRC2	ROR-S, SIS
ABCO-CHNO	CWC9	ROR-C, UMP

SHASTA RED FIR-WHITE FIR/SADLER OAK (CRH1)

Shasta red fir (ABMAS) or white fir (ABCO) growing in association with Sadler oak (QUSA). Environments are cool, dry, and at relatively high elevations.

ABMAS-QUSA	CRH1	ROR-S, SIS
ABMAS/SYMO	CRS2	ROR-S, SIS
ABCO-QUSA/CHUM	CWH3	ROR-S, SIS
ABCO-QUSA/BENE-PAMY	CWH3	ROR-S, SIS
ABCO-QUSA/BENE	CWH3	ROR-S, SIS
ABCO-QUSA-CACH	CWH3	ROR-S, SIS

Mountain hemlock series

MOUNTAIN HEMLOCK/BIG HUCKLEBERRY (CMS2)

Mountain hemlock (TSME) often growing with Pacific silver fir (ABAM) and occasionally other high-elevation tree species as lodgepole pine (PICO) or western white pine (PIMO). Big huckleberry (VAME) dominates shrub layer or occurs with Alaska huckleberry (VAAL). Beargrass (XETE) dominates ground cover in some associations. Cold sites with deep, persistent snowpacks and well-drained, often stony or pumice-derived soils. Very difficult to regenerate and tree growth is usually slow.

TSME/VAME-GIP	CMS2 10	GIP, MBS
TSME/VAME-WALLO	CMS2 31	WAW
TSME/VAME	CMSE	WEN, OKA
TSME/VAME/XETE	CMS2 16	MTH, WIL
TSME/VAME/XETE-OLY	CMS2 45	OLY, MBS
TSME/VAAL/XETE	CMS2 43	OLY
TSME/XETE	CMF1	WEN

MOUNTAIN HEMLOCK/ WOODBRUSH (CMG2)

Mountain hemlock (TSME), often with Pacific silver fir (ABAM), in the tree layer. Woodrush (LUHI) is common as ground vegetation. Very cold sites with deep, persistent snowpacks and well-drained soils. Very difficult to regenerate trees and very slow tree growth.

TSME/LUHI	CMG2 11	WIL, DES
TSME/LUHI	CMG2	WEN, OKA

MOUNTAIN HEMLOCK/GROUSE HUCKLEBERRY (CMS1)

Mountain hemlock (TSME) usually dominates tree overstory, often growing in association with Pacific silver fir (ABAM), lodgepole pine (PICO), and western white pine (PIMO). Grouse huckleberry (VASC) or pinemat manzanita (ARNE) dominate the shrub layer. Long-stolon sedge (CAPE) is prevalent ground cover in central and southern Oregon Cascades. Cold sites with deep, persistent snowpacks and well-drained, often stony or coarse pumice soils. Very difficult reforestation and very slow tree growth. Stand basal areas often quite high.

TSME/VASC	CMS1 14	MTH, WIL, UMP, ROR-C
TSME/VASC/CAPE	CMS1 11	WIN, DES
TSME/VASC-WALLO	CMS1 31	WAW
TSME/ARNE	CMS1	UMP, ROR-C
ABMAS-TSME/VASC	CRS1 12	WIN, ROR-C
ABMAS-TSME/ARNE	CRS1 11	WIN, ROR-C
PICO-TSME-ABMAS	CLC5	UMP, ROR-C
ABMAS/CAPE	CRG1 11	WIN, ROR-C

MOUNTAIN HEMLOCK/ RHODODENDRON (CMS6)

Mountain hemlock (TSME), usually growing in association with Pacific silver fir (ABAM) and occasionally other high-elevation species. Pacific rhododendron (RHMA), often with beargrass (XETE), is in understory. Cold sites with deep, persistent snowpacks and stony, nutrient poor soils. Very difficult to achieve adequate tree stocking, and tree growth is very slow.

TSME/RHMA	CMS6 12	WIL, UMP

MOUNTAIN HEMLOCK ALPINE PARKS (CAXX)

Mountain hemlock (TSME) occurs as high-elevation savanna in pure clumps or mixed with whitebark pine (PIAL) or subalpine fir (ABLA2). Environments are very cold and dry. Soils are often derived from volcanic extrusives in Oregon Cascades but are of various parent materials in Washington.

TSME/PHEM-VADE	CMS3 11	OLY, MBS, GIP, MTH, WIL, DES, WIN
ABLA2-PIAL/CAGE	CAG1 11	OCH, MAL, WAW, UMA
PIAL/CAGE	CAG1 12	OKA

SUBALPINE FIR/ WHORTLE-BERRY (CES4)

Subalpine fir (ABLA2) is the climax potential with a variety of low shrubs representative of droughty, frost-prone, nutrient-poor sites. Lodgepole pine (PICO) dominates many stands with subalpine fir or Engelmann spruce (PIEN) regenerating underneath the lodgepole overstory. Grouse whortleberry (VASC) usually dominates the shrub layer. Severe regeneration problems due to frost and droughty soils at high elevations. Tree growth is poor.

ABLA2/PHEM	CES6 11	OKA, WEN
ABLA2/VASC-O&C	CES4 12	OKA, COL, WEN
ABLA2/ARUV	CES4	OKA, WEN
ABLA2/VASC-BLUE	CES4 11	OCH, MAL, UMA, WAW
ABLA2-PIEN/VASC	CEC2	OCH, MAL, UMA, WAW
ABLA2/VASC/POPU	CES4 15	WAW
ABLA2/JUCO4	CES4	MTH, WIL
ABLA2/JUCO4	CES6 21	OLY
ABLA2/LULA	CEF3 21	OLY

SUBALPINE FIR/FORB, WET (CEFW)

Subalpine fir (ABLA2) is the climax potential usually with Engelmann spruce (PIEN) as codominant. Other conifers such as Douglas-fir (PSME), western larch (LOAC), and lodgepole pine (PICO) may be present. Moist-site herbs such as claspleaf twistedstalk (STAM) and false bugbane (TRCA3) typify the understory. Sitka alder (ALSI) may be a common seral shrub. Sites have fertile, moist to wet soils and cool to cold temperatures during growing season. Regeneration is difficult to establish owing to wet soils. Tree growth is poor to moderate.

ABLA2/TRCA3	CEF4 22	COL, OKA
ABLA2/STAM	CEF3 11	WAW

SUBALPINE FIR/FORB, MESIC (CEFM)

Subalpine fir (ABLA2) is the climax potential usually associated with Engelmann spruce (PIEN), Douglas-fir (PSME), lodgepole pine (PICO), western larch (LAOC), and western white pine (PIMO). The understory is dominated by herbs or subshrubs as bunchberry (COCA), twinflower (LIBO2), beadlily (CLUN), and arnica (ARCO). Environments are moist, with well-drained soils and cool to frosty air temperatures during growing season. Reforestation is not difficult, provided soils are not compacted or frost pockets created during harvest. Tree growth is slow to moderate.

ABLA2/COCA	CEF4 23	COL, OKA
ABLA2/LIBO2-O&C	CEF2 11	OKA, COL, WEN
ABLA2/CLUN	CEF4 21	COL
ABLA2/ARCO	CEF4	OCH, MAL, UMA
ABLA2/LULA	CAG3	MTH, WIL
ABLA2/LIBO2	CEF2 21	WAW
ABLA2/CLUN	CEF4 12	WAW

Subalpine larch series

ALPINE LARCH (CAC1)

Closed forest sites at high elevations with subalpine larch (LALY) as the climax dominant species in tree layer. A variety of shrubs and herbs may be present. The most common shrub is mountain heather (PHEM). The most common herb is smooth woodrush (LUGL). The highest elevation closed forests in the Pacific Northwest. Sites are severe with very deep snowpacks, frost, and short growing seasons. Tree growth is very slow. Regeneration in subalpine larch stands after a catastrophic disturbance may require centuries to occur.

LALY	CAC1	OKA, WEN

Englemann spruce series

ENGELMANN SPRUCE WETLANDS (CEM0)

Very moist to wet sites with Engelmann spruce (PIEN) as the indicated climax species. Black cottonwood (POTR2) may be present. A rich herb layer dominated by species such as horsetail (EQAR), claspleaf twisted stalk (STRO), and miterworts typify the understory. Regeneration may be very difficult on many sites, especially those with horsetails (*Equisetum* sp.), because of seasonally high water tables. Old logs and rootwads are important microsites for establishment of tree regeneration. Tree growth is low to moderate.

PIEN/EQUIS	CEM2 11	OKA, COL, WEN
PIEN/WETLAND	CEM2	MAL, UMA
PIEN/CAEU	CEM1 11	DES, WIN
PIEN/EQAR-STRO	CEM2 21	DES, WIN
PIEN/CLUN	CEM222	DES, WIN, OCH
PIEN/VAOC2/FORB	CEM3 11	DES, WIN
PIEN/VAOC2/CAEU	CEM3 12	DES, WIN
PIEN BOTTOMLANDS	CWS9 11	DES

Black cottonwood-aspen series

BLACK COTTONWOOD (HCXX)

Associations occur at low to mid elevation in riparian areas.

POTR2/SYAL-COST	HCS3	COL, WEN, OKA
POTR2-PIEN/ALIN-COST	HCC1 11	WIN
POTR2/CAEU	HCG1 11	DES
POTR2/SYAL/POPR	HCS3 11	OCH

ASPEN/SNOWBERRY (HQS2)

Associations occur on imperfectly drained soils along margins of meadows and on concave to flat microrelief at bottom slope positions.

POTR/SYAL	HQS2 11	COL, WEN, OKA
POTR/SYAL/ELGL	HQS2 21	DES, WIN, FRE, OCH

POTR/SPDO/CAEU	HQM4 11	DES, WIN, FRE
POTR-PICO/SPDO	HQC1 11	DES, WIN, FRE
POTR-PICO/ARUV	HQC1 12	DES, WIN, FRE

ASPEN/PINEGRASS (HQG1)

Associations occur on relatively well-drained soils, often at high elevations.

POTR/CARU	HQG1 11	COL, WEN, OKA

ASPEN/SEDGE WETLAND (HQM0)

Associations occur on poorly drained soils, often a component of riparian areas.

POTR/CALA3	HQM2 11	DES, WIN, FRE, OCH
POTR/ELGL	HQM1 21	DES, WIN, FRE, OCH

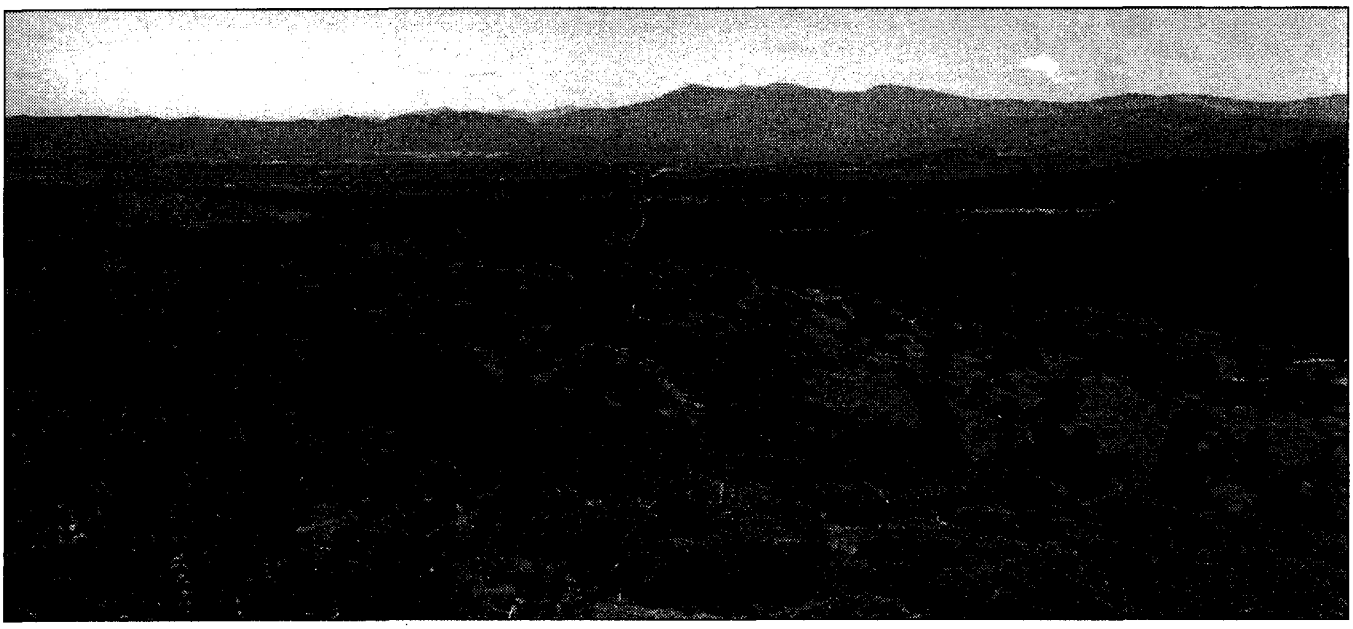
Appendix 3

Ecological Land Classification and Ecoregions

Driscoll, Richard S.; Merkel, Daniel L.; Radloff, David L. [and others]. 1984. An ecological classification framework for the United States. Misc. Publ. 1439. Washington, DC: U.S. Department of Agriculture, Forest Service. 56 p.

Bailey, Robert G. 1980. Description of the ecoregions of the United States. Misc. Publ. 1391. Washington, DC: U.S. Department of Agriculture, Forest Service. 77 p.

90 Application of the ecological land classification framework to plant associations in the Pacific Northwest
114 Comparison of series occurring in more than one formation
115 Characterization of Bailey's ecoregions, Oregon and Washington
120 Characteristics of formations by ecoregion, Oregon and Washington



Application of the ecological land classification framework to plant associations in the Pacific Northwest—Plant associations characterized by productivity data in Washington and Oregon have been organized by the vegetation component of Driscoll and others (1984).

Most associations are characterized by herbage production (pounds per acre). Forest associations are further characterized by site index (SI) at age 100 (feet) for the primary association species, growth basal area (GBA) at age 100 (square feet per acre) for the primary association species, and cubic volume stand growth index for the association (cubic feet per acre per year).

Association data are summarized by formation and then by series in an attempt to demonstrate floristic and quantitative characteristics of the vegetation component. A summary table following the basic classification shows a comparison of series that occur in more than one formation.

Coniferous trees can grow in several formations. For example, ponderosa pine can occur in IA9b—evergreen needle-leaved closed forest with rounded crowns; IIA2a—evergreen needle-leaved woodland with rounded crowns; VB1e—medium-tall grassland with evergreen trees and semideciduous shrubs; and in VC1e—short grassland with evergreen trees and semideciduous shrubs. Associations were assigned to the various formations by using the following criteria:

Formation IA9a (giant forest): site index (SI) greater than 120 feet.

Formation IA9b (closed forest): site index (SI) less than 120 feet; growth basal area (GBA) greater than 75 square feet.

Formation IIA2a (woodland): growth basal area (GBA) 35 to 75 square feet.

Formation VB1e (grassland, trees): growth basal area (GBA) less than 35 square feet.

Formation VC1e (grassland, trees): growth basal area (GBA) less than 35 square feet.

Herbage production was not estimated in some forest types, in which case no data have been entered.

Formation	Description	SI	GBA	Ft^3	Herbage
IA9a	Giant conifer forest	141	432	228	362
IA9b	Closed conifer, rounded crowns	88	210	82	245
IA9c	Closed conifer, conical crowns	74	232	78	265
IB3b	Montane cold-deciduous forest	88	185	74	959
IIA2a	Conifer woodland, rounded crowns	65	59	22	223
IIIA1c	Broad-leaved evergreen shrubland				366
IIIB3a	Temperate deciduous shrubland				506
IIIB3b	Subalpine deciduous shrubland				282
VB1e	Medium-tall grassland, conifers				366
VB2c	Medium-tall grassland, deciduous shrubs				173
VB2b	Medium-tall grassland, semideciduous shrubs				359
VB4a	Medium-tall grassland, sodgrasses				1400

VB4b	Medium-tall grassland, bunchgrass				1108
VC1e	Short grassland, conifers	65	34	15	128
VC2b	Short grassland, semideciduous shrub				178
VC5a	Short grassland, sodgrasses				391
VC5b	Short grassland, bunchgrasses				184
VC6a	Mesophytic grasslands (meadows)				2003
VC6b	Subalpine meadows				949
VD2a	Perennial flowering forbs				776

***FORMATION: 1A9a*—Evergreen needle-leaved closed forest, giant forest (taller than 150 feet).**

Series: Pacific silver fir (ABAM)		**SI**	**GBA**	**Ft^3**	**Herbage**
CFC311	ABAM-ABGR/SMST	133	496	264	220
CFF111	ABAM/OXOR-OLY	150	565	261	
CFF152	ABAM/TIUN	125	398	248	478
CFF153	ABAM/OXOR	130	410	300	500
CFF154	ABAM/TIUN-STRO	128	501	189	
CFF162	ABAM/TITRU	198	447	238	79
CFF250	ABAM/ACTR	155	410	189	
CFF253	ABAM/ACTR-CLUN	130	415	266	488
CFF254	ABAM/ACTR-WEN	160	294	130	37
CFF450	ABAM/RUPE/BLSP	137	627	268	
CFF611	ABAM/POMU	145	660	291	
CFF612	ABAM/POMU-OXOR	154	383	180	
CFM111	ABAM/LYAM	127	744	239	
CFS156	ABAM/GASH/OXOR	149	577	261	
CFS212	ABAM/VAAL-OLY	127	528	206	
CFS217	ABAM/VAAL/OXOR	136	672	250	
CFS226	ABAM/VAAL/TIUN-MBS	130	517	152	
CFS231	ABAM/VAAL/POMU	143	955	347	
CFS232	ABAM/VAAL-WEN	150	316	125	23
CFS256	ABAM/VAME/CLUN	118	450	284	225
CFS260	ABAM/VAAL/CLUN-MBS	120	556	213	
CFS351	ABAM/OPHO	131	420	281	500
CFS351	ABAM/OPHO	185	384	191	178
CFS352	ABAM/OPHO-VAAL	126	585	183	
CFS542	ABAM/MEFE	125	342	110	13
CFS621	ABAM/ACCI	150	309	124	25
CFS651	ABAM/ACCI/TIUN	137	480	350	478
	Series mean	**140**	**490**	**227**	**250**

Series: Douglas-fir (PSME)		**SI**	**GBA**	**Ft^3**	**Herbage**
CDC711	PSME-TSHE/BENE	145	400	255	149
CDC712	PSME-TSHE/RHMA	133	317	169	116

CDC713	PSME-TSHE/GASH	138	404	223	200
CDS212	PSME/HODI/GRASS	121	312	166	169
CDS612	PSME-ABCO/SYAL/LIBO2	121	190	140	10
CDS613	PSME-ABCO/SYAL/FORB	125	245	160	10
CDS633	PSME/SYAL-O&C	132	234	117	65
CDS641	PSME/SYMO	123	496	165	92
CDS661	PSME/SYAL-MTH	125	278	134	
	Series mean	**128**	**320**	**170**	**102**
Series: White fir (ABCO)		**SI**	**GBA**	**Ft³**	**Herbage**
CWS911	PIEN-ABCO/BOTTOMS	129	186	120	50
	Series mean	**129**	**186**	**120**	**50**
Series: Grand fir (ABGR)		**SI**	**GBA**	**Ft³**	**Herbage**
CWC311	ABGR-ABAM/SMST	133	496	264	220
CWC511	ABGR-PIEN/SMST	133	352	154	
CWF111	ABGR/CHUM	132			299
CWF321	ABGR/LIBO2	124	257	127	
CWF521	ABGR/TRLA2	134	337	141	
CWF522	ABGR/ACTR	145	298	144	
CWF523	ABGR/POPU	132	346	414	
CWF524	ABGR/ARCO	128	349	173	66
CWF611	ABGR/GYDR	121	298	153	426
CWG121	ABGR/CAGE	150	258	100	
CWG122	ABGR/CAGE-GP	145	509	221	
CWG123	ABGR/CARU	160	641	307	
CWG124	ABGR/ACTR-WEN	126	175	86	193
CWG214	ABGR/VAME/CLUN	120	423	160	64
CWS221	ABGR/VAME/LIBO2	145	281	115	
CWS223	ABGR/RUPA/DIHO	155	332	133	
CWS226	ABGR/BENE/CARU	126	242	114	150
CWS331	ABGR/SYMPH	132	279	119	
CWS332	ABGR/SYMO/ACTR	155	392	206	
CWS522	ABGR/BENE	131	370	145	284
CWS531	ABGR/HODI	139	405	168	
CWS532	ABGR/ACCI/ACTR	142	264	131	
CWS534	ABGR/HODI-GP	150	358	114	
CWS535	ABGR/ACCI-BEAQ/TRLA2	164	461	163	
CWS536	ABGR/COCO2/ACTR	164	499	149	
CWS551	ABGR/ACCI-WEN	156	511	343	151

CWS552	ABGR/ACCI/CHUM	145	393	236	23
CWS553	ABGR/ACCI/CLUN	150	395	263	20
CWS911	PIEN-ABCO/BOTTOMS	129	186	120	50
SWS222	ABGR/VAME/CLUN	148	344	169	
	Series mean	**140**	**360**	**177**	**162**
Series: Sitka spruce (PISI)		**SI**	**GBA**	**Ft³**	**Herbage**
CSF111	PISI/POMU/OXOR	168	2040	1035	
CSF121	PISI/POMU	161	913	587	1390
CSF321	PISI/OXOR	169	875	591	1930
CSS221	PISI/MEFE-VAPA	175	747	522	816
CSS321	PISI/GASH	164	484	317	525
CSS521	PISI/RUSP	174	567	394	1249
CSS522	PISI/RUSP-GASH	155	632	391	975
CSS621	PISI/OPHO	170	660	448	1570
	Series mean	**167**	**865**	**536**	**1208**
Series: Western hemlock (TSHE)		**SI**	**GBA**	**Ft³**	**Herbage**
CHC311	TSHE-ABGR/CLUN	122	289	110	
CHF111	TSHE/OXOR-WILL	158	477	301	608
CHF112	TSHE/OXOR-OLY	147	793	350	
CHF121	TSHE/OXOR-COAST	122	558	272	1630
CHF122	TSHE/POMU-COAST	124	591	293	1391
CHF123	TSHE/POMU-MTH	135	466	251	1000
CHF124	TSHE/POMU-OXOR	157	463	291	1061
CHF125	TSHE/POMU	161	504	324	633
CHF131	TSHE/POMU-OXOR-OLY	181	578	322	
CHF132	TSHE/POMU-TITR-OLY	139	591	246	
CHF133	TSHE/POMU-GASH	132	311	129	
CHF134	TSHE/POMU-BENE	135	543	242	
CHF135	TSHE/POMU-TITR-MBS	137	321	145	
CHF151	TSHE/POMU-WILL	159	389	247	205
CHF211	TSHE/ACTR-OLY	149	492	233	
CHF221	TSHE/ACTR	139	402	223	335
CHF222	TSHE/TITR	163	564	368	620
CHF250	TSHE/TITR-GYDR	164	1121	602	
CHF313	TSHE/ASCA3	126	313	180	40
CHF321	TSHE/LIBO2	148	525	311	266
CHF421	TSHE/ATFI	166	601	399	1701
CHF422	TSHE/GYDR	120	506	208	54
CHF911	TSHE(DEP)	155	422	196	
CHM111	TSHE/LYAM-OLY	120	201	72	
CHM121	TSHE/LYAM	120	408	195	770
CHS111	TSHE/GASH-WILL	137	385	211	241

CHS113	TSHE/BENE/OXOR	159	524	333	647
CHS114	TSHE/BENE/ACTR	158	476	301	262
CHS123	TSHE/GASH-COAST	121	468	226	708
CHS124	TSHE/BENE-GASH	131	440	230	380
CHS125	TSHE/BENE	125	380	190	91
CHS126	TSHE/BENE/POMU	142	401	228	584
CHS127	TSHE/BENE-GASH-GP	127	381	193	162
CHS130	TSHE/BENE-MBS	122	399	137	
CHS131	TSHE/GASH	132	312	123	
CHS133	TSHE/GASH-VAOV2	134	582	233	
CHS135	TSHE/GASH-BENE	126	369	147	
CHS136	TSHE/GASH/OXOR	120	500	180	
CHS137	TSHE/GASH/POMU	149	434	199	
CHS138	TSHE/BENE-WASH	122	322	99	
CHS139	TSHE/GASH/POMU-OLY	165	454	229	
CHS221	TSHE/ACCI-GASH-COAST	123	452	222	1737
CHS222	TSHE/ACCI/POMU-COAST	126	412	207	1488
CHS223	TSHE/ACCI/ACTR	134	472	252	1000
CHS224	TSHE/CONU/ACTR	135	420	227	270
CHS227	TSHE/ACCI/CLUN	128	249	129	40
CHS251	TSHE/ACCI-BENE	136	478	195	
CHS326	TSHE/RHMA-VAAL/COCA	120	517	248	680
CHS351	TSHE/RHMA/GASH-WILL	128	350	179	88
CHS352	TSHE/RHMA/BENE-WILL	136	482	262	90
CHS353	TSHE/RHMA/XETE-WILL	122	336	164	419
CHS354	TSHE/RHMA/OXOR	135	495	267	360
CHS355	TSHE/RHMA/LIBO2	130	447	232	20
CHS421	TSHE/RUSP-COAST	123	528	259	1462
CHS422	TSHE/RUSP/ACCI	130	421	218	1488
CHS423	TSHE/RUSP-GASH-COAST	123	341	167	855
CHS511	TSHE/OPHO-WILL	168	466	313	1106
CHS512	TSHE/OPHO-OLY	188	1044	586	
CHS513	TSHE/OPHO/ATFI	144	561	333	
CHS521	TSHE/OPHO-COAST	130	510	265	1530
CHS522	TSHE/OPHO/OXOR	161	335	215	1600
CHS523	TSHE/OPHO/SMST	146	212	123	1400
CHS524	TSHE/OPHO/POMU	172	556	382	1317
CHS611	TSHE/VAAL-OPHO	156	630	393	1300
CHS613	TSHE/VAAL/OXOR	136	437	238	1313
CHS614	TSHE/VAAL/GASH	123	396	195	308
CHS615	TSHE/VAAL/COCA	135	349	188	278
CHS621	TSHE/VAAL	140	389	163	
CHS623	TSHE/VAAL/OXOR	135	522	209	

CHS624	TSHE/VAAL-GASH-OLY	132	548	217	
CHS625	TSHE/VAAL/POMU	126	842	370	
	Series mean	**140**	**471**	**242**	**745**

Series: Mountain hemlock (TSME)		**SI**	**GBA**	**Ft^3**	**Herbage**
CMS256	TSME/MEFE-VAAL	138	269	95	13
CMS257	TSME/MEFE-VAME	147	302	116	18
	Series mean	**143**	**286**	**106**	**16**
	Formation mean	**141**	**432**	**228**	**362**

***Formation: IA9b*—Evergreen needle-leaved closed forest, rounded crowns.**

Series: Douglas-fir (PSME)		**SI**	**GBA**	**Ft^3**	**Herbage**
CDG111	PSME/CAGE-BLUE	71	123	36	303
CDG112	PSME/CARU-BLUE	81	133	46	382
CDG121	PSME/CARU-0&C	80	168	60	262
CDG123	PSME/ARUV-OKAN	57	102	35	64
CDG131	PSME/CARU-O&C	82	173	59	311
CDG141	PSME/CAGE	82	160	55	
CDG321	PSME/FEOC	100	235	90	
CDS211	PSME/HODI/BENE	115	311	135	10
CDS213	PSME/HODI/WIMO	106	290	135	120
CDS221	PSME/HODI-ROGY	71	265	57	
CDS231	PSME/HODI/CAGE	119	245	117	
CDS241	PSME/ACCI/FEOC	114	261	117	
CDS255	PSME/GASH	83	221	56	
CDS411	PSME/PAMY	86	225	100	27
CDS611	PAME/HODI	117	190	96	256
CDS614	PSME-ABCO/SYAL/CARU	112	140	101	10
CDS622	PSME/SYAL-WALLO	76	170	50	150
CDS623	PSME/SYOR-WALLO	78	150	50	150
CDS624	PSME/SYAL-BLUE	89	138	56	412
CDS629	PSME/SYOR-WEN	81	149	53	347
CDS631	PSME/ARUR-PUTR	66	84	28	74
CDS632	PSME/SYOR-O&C	82	126	45	172
CDS634	PSME/SPBE	80	160	50	315
CDS636	PSME/SYAL-WEN	115	244	139	75
CDS637	PSME/SYAL/AGSP	95	123	52	318
CDS638	PSME/SYAL/CARU	111	208	100	261
CDS639	PSME/SPBEL/CARU	93	177	77	143
CDS640	PSME/SPBEL	97	151	68	10
CDS651	PSME/ARUR	43	116	14	
CDS653	PSME/ARUV-WEN	50	173	33	160
CDS655	PSME/ARUV/CARU	54	103	21	84

CDS662	PAME/ARNE	80	405	64	
CDS673	PSME/PUTR	69	101	31	59
CDS674	PSME/PUTR/AGSP	87	145	59	244
CDS675	PSME/PUTR/CARU	81	153	58	106
CDS711	PSME/PHMA-BLUE	88	124	50	273
CDS715	PSME/PHMA-O&C	102	220	96	47
CDS716	PSME/PHMA-LIBO2	85	178	64	102
CDS722	PSME/ACGL/PHMA	102	160	70	150
CDS811	PSME/VACCI	73	144	56	77
CDS813	PSME/VACA	57	191	79	103
CDS814	PSME/VAME-COLV	94	185	80	57
CDS821	PSME/VAME-BLUE	79	90	28	441
CDS831	PSME/VACA	84	131	49	137
CDS832	PSME/VAMY-WEN	74	117	37	41
CDS833	PSME/VAME/CARU	66	166	50	91
	Series mean	**85**	**177**	**67**	**159**

Series: Lodgepole pine (PICO)		**SI**	**GBA**	**Ft³**	**Herbage**
CLC111	PICO-PIAL/PELA	51	99	20	50
CLC112	PICO-PIAL/ARCO2	40	90	18	50
CLF111	PICO/FORB	72	94	27	150
CLG211	PICO/CARU-VASC	68	110	30	274
CLG313	PICO/STOC-LINU-PUM	75	82	25	73
CLG315	PICO/FRVI-FEID	73	135	39	150
CLG411	PICO/CAPE-LUCA-PUM	81	119	39	137
CLG412	PICO/CAPE-PEEU-PUM	83	134	44	50
CLG415	PICO/SIHY-CAPE	66	79	21	50
CLH111	PICO-POTR/FRVI	79	180	57	150
CLM111	PICO/CANE-PUM	84	109	36	1225
CLM112	PICO/POPR	91	190	69	1066
CLM113	PICO/CAEU	94	178	67	2187
CLM114	PICO/CAAQ	75	199	60	1800
CLM211	PICO/ARUV	79	74	23	33
CLM311	PICO/VAOC-PUM	78	98	31	105
CLM312	PICO/VAOC2/CAEU	89	169	60	864
CLM313	PICO/SPDO-FORB	84	202	68	250
CLM314	PICO/SPDO/CAEU	97	188	73	1200
CLM411	PICO/XETE-PUM	93	126	82	400
CLM911	PICO-PIEN/ELPA2	58	76	18	970
CLS212	PICO/PUTR/STOC-PUM	85	107	36	16
CLS214	PICO/PUTR/FEID-PUM	75	83	25	75
CLS411	PICO/VASC-BLUES	60	92	22	116
CLS412	PICO/VASC-PUM	75	82	25	10
CLS413	PICO/VASC-FORB	90	161	59	100

CLS414	PICO/VASC/CAPE	71	105	30	100
CLS416	PICO/CARU	73	132	42	313
CLS511	PICO/VAME	54	97	23	200
CLS521	PICO/SHCA	61	162	43	75
	Series mean	**75**	**102**	**42**	**408**
Series: Ponderosa pine (PIPO)		**SI**	**GBA**	**Ft³**	**Herbage**
CPC211	PIPO-JUOC/CELE/FEID	76	108	33	250
CPF111	PIPO/WYMO	78	100	31	250
CPG131	PIPO/FEID-WALLO	77	85	28	220
CPG132	PIPO-AGSP-WALLO	75	75	25	240
CPG221	PIPO/CARU	71	41	41	421
CPG222	PIPO/CAGE	70	77	24	393
CPH211	PIPO-QUGA/BASA	65	119	31	
CPH212	PIPO-QUGA/PUTR	63	124	38	
CPH311	PIPO-POTR/POPR	78	124	55	1200
CPS121	PIPO/ARTR/PONE	76	99	33	75
CPS131	PIPO/ARTR/FEID-AGSP	81	81	29	354
CPS211	PIPO/PUTR/FEID-PUM	76	79	26	121
CPS217	PIPO/PUTR/FEID-AGSP	71	80	25	93
CPS218	PIPO/PUTR/SIHY-RYHO	71	80	25	93
CPS221	PIPO/PUTR/CARO	67	90	28	194
CPS311	PIPO/PUTR-CEVE/STOC-PUM	81	92	33	10
CPS312	PIPO/PUTR-CEVE/CAPE-PUM	84	94	35	71
CPS314	PIPO/PUTR-CEVE/CAPE	83	94	35	71
CPS511	PIPO/SYAL-FLOOD	95	187	71	699
CPS522	PIPO/SYAL-WALLO	78	100	34	600
CPS523	PIPO/SPBE	76	90	30	80
CPS524	PIPO/SYAL	94	154	70	582
CPS525	PIPO/SYOR	80	110	39	431
	Series mean	**77**	**104**	**36**	**307**
Series: White fir (ABCO)		**SI**	**GBA**	**Ft³**	**Herbage**
CWC111	ABC0-PIPO-CADE/AMAL	81	265	86	10
CWC211	ABCO/CEVE-CACH/PTAQ	90	103	41	80
CWC212	ABCO/CEVE-CACH/CARU	110	140	68	80
CWC213	ABCO/CEVE/CAPE-PTAQ	81	95	34	80
CWC215	ABCO/PSME-CEVE/ARUV	100	240	96	10
CWC311	ABCO-PICO/STOC-CAPE	77	102	34	40
CWC411	ABCO-PIPO-PIMO/RICE	80	226	72	10
CWC412	ABCO-PIPO-PILA/ARPA	90	240	86	10
CWF431	ABCO/CLUN	110	316	139	227
CWH111	ABCO/CEVE-CACH/STOC	85	91	34	40
CWH112	ABCO/CACH/PAMY/CHUM	116	237	109	100

CWH211	ABCO-PIPO-POTR/CAREX	78	136	42	1200
CWM111	ABCO/ALTE/SYAL	110	220	97	800
CWS112	ABCO/CEVE-ARPA-PUM	79	89	31	10
CWS113	ABCO/ARPA-SYAL/CAPE	83	165	55	30
CWS114	ABCO/CEVE-PUM	85	77	29	10
CWS115	ABCO/CEVE/CAPE	83	97	35	28
CWS116	ABCO/CEVE/CEPR-FRVI	91	81	32	10
CWS117	ABCO-PIPO/ARPA/BERE	93	250	93	20
CWS312	ABCO/SYAL/FRVI	95	128	49	10
CWS313	ABCO-PIPO/SYAL/STJA	88	240	84	20
	Series mean	**91**	**168**	**64**	**135**

Series: Grand fir (ABGR)		**SI**	**GBA**	**Ft³**	**Herbage**
CWC811	ABGR/TABR/CLUN	104	279	124	239
CWC812	ABGR/TABR/LIBO2	83	283	102	118
CWF311	ABGR/LIBO2-FORB	85	218	74	208
CWF312	ABGR/LIBO2-BLUE	77	216	70	212
CWF411	ABGR/CLUN	102	423	127	26
CWF421	ABGR/CLUN-WALLO	101	308	141	185
CWF512	ABGR/TRCA3	108	279	128	353
CWF612	ABGR/POMU-ASCA3	107	243	116	436
CWG111	ABGR/CAGE-BLUE	75	233	70	215
CWG112	ABGR/CARU-ASH	83	140	46	330
CWG113	ABGR/CARU-BLUE	87	198	76	339
CWG211	ABGR/BRVU	80	260	88	401
CWS211	ABGR/VAME	78	168	52	301
CWS212	ABGR/VAME-BLUE	71	183	56	213
CWS224	ABGR/BENE/ACTR	103	264	85	
CWS321	ABGR/SPBE	103	300	95	80
CWS322	ABGR/SPBE-BLUE	118	188	69	311
CWS412	ABGR/AGGL/PHMA	77	210	65	80
CWS421	ABGR/PHMA	115	240	84	92
CWS521	ABGR/ARUV	86	213	73	360
CWS533	ABGR/CACH	84	214	88	
CWS537	ABGR/CONU/ACTR	95	329	93	
CWS541	ABGR/ACGL	111	236	118	305
CWS811	ABGR/VASC	75	152	41	247
CWS812	ABGR/VASC-LIBO2	81	212	74	196
CWS821	ABGR/VACA	106	205	92	101
CWS912	ABGR/ACGL	115	375	180	80
	Series mean	**93**	**243**	**93**	**226**

Series: Western redcedar (THPL)		SI	GBA	Ft³	Herbage
CCF211	THPL-ABGR/ACTR	108	308	142	
CCF212	THPL/ACTR	71	368	131	109
CCF221	THPL/CLUN	73	317	102	48
CCF222	THPL/ARNU3	109	380	183	65
CCS211	THPL/OPHO	96	473	200	206
CCS311	THPL/VAME	89	180	75	75
	Series mean	**91**	**338**	**139**	**101**
Series: Western hemlock (TSHE)		**SI**	**GBA**	**Ft³**	**Herbage**
CHC212	TSHE-PSME/HODI	113	372	168	350
CHC213	TSHE-PSME/ARME	105	385	161	125
CHF311	TSHE/CLUN	110	285	120	28
CHF312	TSHE/ARNU3	108	287	139	128
CHF511	TSHE/XETE-OLY	80	252	36	
CHF521	TSHE/XETE-COLV	89	362	122	13
CHF911	TSHE-DEPAUP	107	422	135	
CHM111	TSHE/LYAM-OLY	77	201	46	
CHS121	TSHE/BENE-COAST	115	538	347	975
CHS122	TSHE/BENE-GASH-COAST	113	502	226	697
CHS128	TSHE/GASH	117	317	148	275
CHS129	TSHE/GASH-MBS	100	286	87	
CHS131	TSHE/GASH-OLY	112	182	60	
CHS132	TSHE/GASH/XETE	89	303	67	
CHS134	TSHE/GASH-HODI	105	232	72	
CHS135	TSHE/GASH-BENE	117	348	124	
CHS138	TSHE/BENE-OLY	95	322	99	
CHS140	TSHE/GASH-VAME	96	303	85	
CHS141	TSHE/BENE-CHME	97	273	72	
CHS321	TSHE/RHMA/BENE-COAST	100	398	159	392
CHS322	TSHE/RHMA/GASH-COAST	113	429	193	562
CHS323	TSHE/RHMA/POMU	111	504	193	562
CHS324	TSHE/RHMA/VAOV2-COAST	113	406	183	333
CHS325	TSHE/RHMA/XETE-MTH	94	250	94	300
CHS327	TSHE/RHMA/GASH-MTH	112	299	133	150
CHS328	TSHE/RHMA/BENE-MTH	115	388	178	125
CHS331	TSHE/RHMA-OLY	82	384	94	
CHS332	TSHE/PHAM/XETE-OLY	75	228	52	
CHS333	TSHE/RHAM-BENE-OLY	108	152	39	
CHS334	TSHE/RHMA-BENE-OLY	88	257	71	
CHS335	TSHE/RHMA/POMU	119	286	110	
CHS411	TSHE/RUPE	80	409	176	43
CHS610	TSHE/VAOV2-COAST	118	458	216	912

CHS612	TSHE/VAME/XETE	88	170	59	580
CHS622	TSHE/VAAL/XETE	77	304	67	
CHS624	TSHE/VAAL-GASH-OLY	102	548	168	
CHS626	TSHE/VAAL-BENE	97	277	84	
CHS711	TSHE/MEFE	101	310	135	60
	Series mean	**101**	**229**	**121**	**348**
	Formation mean	**88**	**210**	**82**	**242**

FORMATION: IA9C—Evergreen needle-leaved forest, conical crowns.

Series: Subalpine fir (ABLA2)		**SI**	**GBA**	**Ft³**	**Herbage**
CAG111	ABAL2/CAGE	70	175	51	334
CEF111	ABLA2/XETE	54	222	99	5
CEF211	ABLA2/LIBO2-O&C	93	202	73	81
CEF221	ABLA2/LIBO2	76	190	62	80
CEF222	ABLA2/LIBO-WEN	90	298	129	37
CEF311	ABLA2/STAM	84	180	70	80
CEF321	ABLA2/LULA	42	133	17	
CEF331	ABLA2/TRCA3-BLUE	96	207	90	382
CEF421	ABLA2/CLUN-RM	87	278	114	43
CEF422	ABLA2/TRCA3	87	242	124	167
CEF423	ABLA2/COCA	75	199	111	39
CEF424	ABLA2/ARLA-POPU	65	261	77	152
CEG121	ABLA2/LUHI-WEN	65	264	89	38
CEG310	ABLA2/CARU-WEN	98	237	102	230
CEG311	ABLA2/CARU-O&C	81	188	65	195
CES111	ABLA2/PAMY-OKAN	85	260	138	28
CES113	ABLA2/PAMY-WEN	111	254	131	9
CES131	ABLA2/CLUN	90	180	70	98
CES210	ABAL2/RHAL-XETE	56	211	60	12
CES211	ABLA2/RHAL-O&C	61	206	55	48
CES211	ABLA2/RHAL	54	206	95	48
CES212	ABLA2/RHAL-OLY	57	194	35	
CES213	ABLA2/RHAL/LUHI	60	198	54	61
CES214	ABLA2/RHAL-WEN	52	176	40	79
CES221	ABLA2/MEFE	89	248	93	80
CES311	ABLA2/VAME-BLUE	55	114	26	216
CES312	ABLA2/VACCI	90	185	84	50
CES313	ABLA2/VAME-COLV	76	259	93	66
CES314	ABLA2/CLUN	84	308	117	338
CES315	ABLA2/VAME-WALLO	70	160	70	80
CES321	ABLA2/VAME-OLY	81	346	84	
CES342	ABLA2/VAME-WEN	104	265	126	47
CES411	ABLA2/VASC-BLUES	66	168	44	68

CES412	ABLA2/VASC-O&C	50	173	49	5
CES413	ABLA2/VASC/CARU-OKAN	50	169	42	331
CES413	ABLA2/VASC/CARU-OKAN	62	133	35	8
CES414	ABLA2/LIBO2	79	166	54	98
CES415	ABLA2/VASC/POMU	78	190	60	80
CES422	ABLA2/VACA	80	169	55	125
CES422	ABLA2/VACA	94	96	37	30
CES423	ABLA2/RULA	90	276	112	76
CES424	ABLA2/VASC/ARLA	51	249	55	106
CES425	ABLA2/VASC/LUHI	65	146	44	201
CES426	ABLA2/VASC-WEN	98	423	190	27
CES621	ABLA2/JUCO4	28	167	14	
	Series mean	**74**	**212**	**76**	**105**

Series: Whitebark pine (PIAL)		**SI**	**GBA**	**Ft³**	**Herbage**
CAG112	PIAL/CARU	32	101	7	113
	Series mean	**32**	**101**	**17**	**113**

Series: Engelmann spruce (PIEN)		**SI**	**GBA**	**Ft³**	**Herbage**
CEM111	PIEN/CAEU	80	230	74	1480
CEM211	PIEN/EQAR-O&C	92	191	86	129
CEM221	PIEN/EQAR-STRO	90	258	93	1275
CEM222	PIEN/CLUN	105	305	128	326
CEM311	PIEN/VAOC2-FORB	85	233	79	69
CEM312	PIEN/VAOC2/CAEU	76	161	49	2350
	Series mean	**86**	**230**	**85**	**938**

Series: Pacific silver fir (ABAM)		**SI**	**GBA**	**Ft³**	**Herbage**
CFC251	ABAM-TSHE/RHMA/GASH	101	276	138	175
CFF211	ABAM/ACTR-TIUN	113	708	240	
CFF311	ABAM/XETE-OLY	83	396	108	
CFF312	ABAM/XETE-MBS	110	507	162	
CFS110	ABAM/BENE-MBS	100	242	67	
CFS151	ABAM/VENE	68	252	75	576
CFS152	ABAM/GASH	93	324	132	162
CFS154	ABAM/GASH-BENE	107	210	98	
CFS211	ABAM/VAME/XETE-OLY	83	308	75	
CFS213	ABAM/VAAL/ERMO	108	560	182	
CFS214	ABAM/VAAL/XETE-OLY	114	442	151	
CFS215	ABAM/VAAL/TIUN	108	560	183	
CFS216	ABAM/VAAL-BENE	116	410	140	
CFS218	ABAM/VAAL/CLUN-OLY	111	361	135	
CFS219	ABAM/VAAL/LIBO2	109	380	125	
CFS221	ABAM/VAME/VASI	89	442	123	

CFS222	ABAM/VAME/STRO	110	546	181	
CFS223	ABAM/VAME-VAAL	93	302	76	
CFS224	ABAM/VAME	90	241	74	
CFS225	ABAM/VAAL/MADI2	118	643	121	
CFS229	ABAM/VAME/PYSE	99	299	101	
CFS230	ABAM/VAAL-GASH-MBS	91	476	129	
CFS233	ABAM/VAME/CLUN-WEN	119	254	76	48
CFS234	ABAM/VAME-PYSE	98	241	64	6
CFS251	ABAM/VAME/XETE	94	335	156	246
CFS252	ABAM/VAME/XETE-MBS	85	386	94	
CFS253	ABAM/VAAL/COCA	110	407	224	305
CFS254	ABAM/MEFE	73	282	106	242
CFS255	ABAM/VAAL/GASH	72	420	147	225
CFS256	ABAM/VAME/CLUN	118	450	284	225
CFS257	ABAM/VAAL	104	250	126	202
CFS258	ABAM/VAAL-MBS	105	366	113	
CFS259	ABAM/VAAL/XETE-MBS	91	225	76	
CFS311	ABAM/OPHO-OLY	118	471	167	
CFS550	ABAM/RHAL-GP	89	245	113	678
CFS551	ABAM/RHAL/XETE	73	282	106	262
CFS552	ABAM/RHAL/CLUN	73	282	106	186
CFS553	ABAM/RHAL-OKAN	67	234	76	2
CFS554	ABAM/RHAL-VAME	83	241	66	
CFS555	ABAM/RHAL-VAAL	88	259	69	
CFS556	ABAM/RHAL-VAME-WEN	40	268	44	62
CFS558	ABAM/PAMY	93	281	142	24
CFS611	ABAM/RHMA-OLY	107	361	109	
CFS612	ABAM/RHMA-VAAL	96	356	98	
CFS652	ABAM/RHMA/BENE	76	303	158	109
CFS653	ABAM/RHMA/XETE	96	501	257	222
CFS654	ABAM/RHMA/VAAL/COCA	95	361	121	236
	Series mean	**95**	**358**	**125**	**210**

Series: Mountain hemlock (TSME)		**SI**	**GBA**	**Ft³**	**Herbage**
CAF111	TSME-ABLA2/PONE4	47	253	53	
CAF311	TSME-ABLA2/ASLE2	49	196	41	
CAG211	TSME-ABLA2/FEVI	38	135	22	
CAG311	TSME-LUHI	57	297	76	
CAG312	TSME-PIAL/LUHI	43	257	54	
CAS211	TSME/PHEM-VADE	51	269	64	
CAS411	TSME-ABLA2/JUCO4	41	466	84	
CMF131	TSME/XETE-VAMY	75	245	52	63
CMF251	TSME/CABI	42	134	16	
CMG221	TSME/LUHI	77	197	43	27

CMS111	TSME/VASC/CAPE-PUM	82	142	58	10
CMS114	TSME/VASC	54	195	70	235
CMS121	TSME/VASC/LUHI	75	530	112	64
CMS122	TSME/RULA	119	257	79	39
CMS131	TSME/VASC-WALLO	70	260	75	80
CMS210	TSME/VAME	89	246	108	507
CMS216	TSME/VAME/XETE	63	278	80	309
CMS218	TSME/VAME/CLUN	65	303	84	
CMS221	TSME/MEFE	72	215	56	350
CMS223	TSME/RHAL	70	235	66	678
CMS231	TSME/VAME-WALLO	70	260	75	80
CMS241	TSME/VAAL	93	185	50	
CMS242	TSME/VAAL/ERMO	46	370	57	
CMS244	TSME/VAME-VAAL	80	399	94	
CMS245	TSME/VAME/XETE-WASH	70	308	48	
CMS246	TSME/VAME-MBS	70	363	68	
CMS250	TSME/VAME/STRO	86	512	129	
CMS251	TSME/VAME/VASI	70	238	50	
CMS252	TSME/VAAL/STRO	95	402	109	
CMS253	TSME/VAAL/CLUN	81	191	34	
CMS254	TSME/VAME-RULA	78	310	67	
CMS255	TSME/VAAL/MADI2	80	208	45	
CMS258	TSME/VAAL-WEN	93	410	106	24
CMS259	TSME/VAME-WEN	66	226	38	11
CMS350	TSME/PHEM-VADE	53	291	41	
CMS351	TSME/RHAL-VADE	65	300	49	
CMS352	TSME/RHAL-VAME	67	210	30	
CMS353	TSME/CLPY-RUPE	56	281	45	
CMS354	TSME/PHEM-VADE	67	230	46	126
CMS355	TSME/RHAL-VAAL	84	196	46	22
CMS356	TSME/RHAL-VAME	64	242	42	22
CMS450	TSME/OPHO-VAAL	97	291	122	
CMS612	TSME/RHMA	68	249	80	
	Series mean	**69**	**274**	**64**	**156**
Series: Shasta red fir (ABMAS)		**SI**	**GBA**	**Ft³**	**Herbage**
CRG111	ABMAS/CAPE	111	288	178	100
CRS111	ABMAS/ARNE/STOC	62	96	30	20
CRS112	ABMAS-TSME/ARNE/CAPE	80	215	69	30
CRS311	ABMAS/CACH/CHUM-CAPE	111	274	121	125
	Series mean	**91**	**218**	**99**	**69**
	Formation mean	**74**	**232**	**78**	**265**

***Formation: IB3b*—Montane cold-deciduous forest.**

Series: Quaking aspen (POTR)		**SI**	**GBA**	**Ft³**	**Herbage**
HQG111	POTR/CARU	84	189	73	1212
HQM121	POTR/ELGL	85	168	57	1558
HQM411	POTR-PICO/SPDO/CAEU	114	232	106	1500
HQS211	POTR/SYAL	60	120	48	21
HQS221	POTR/SYAL/ELGL	98	216	85	506
	Formation mean	**88**	**185**	**74**	**959**

***Formation: IIA2a*—Evergreen needle-leaved woodland, rounded crowns.**

Series: Douglas-fir (PSME)		**SI**	**GBA**	**Ft³**	**Herbage**
CDG232	PSME/AGSP-ASDE	82	68	25	279
CDG311	PIPO-PSME/AGIN	79	73	25	435
CDS654	PSME/ARUV-PUTR	73	67	22	124
	Series mean	**78**	**69**	**24**	**279**

Series: Ponderosa pine (PIPO)		**SI**	**GBA**	**Ft³**	**Herbage**
CPG111	PIPO/AGSP-BLUE	59	45	13	381
CPG112	PIPO/FEID-BLUE	61	68	18	362
CPG141	PIPO/AGSP-WEN	81	67	30	236
CPG212	PIPO/CAPE-FEID-LALA2	92	71	29	10
CPG231	PIPO/CARU-AGSP	49	65	13	313
CPM111	PIPO/ELGL	74	65	30	1009
CPS111	PIPO/PUTR-ARTR/FEID	65	59	26	217
CPS212	PIPO/PUTR/STOC-PUM	80	70	39	27
CPS213	PIPO/PUTR-ARPA/STOC	76	62	33	28
CPS214	PIPO/PUTR-ARPA/CAPE	82	42	23	50
CPS215	PIPO/PUTR/CAPE-PUM	83	65	38	51
CPS216	PIPO/PUTR/FEID-AGSP	72	55	28	194
CPS222	PIPO/PUTR/CAGE	64	73	20	324
CPS226	PIPO/PUTR/FEID-AGSP	65	67	18	426
CPS232	PIPO/CELE/CAGE	65	64	23	297
CPS233	PIPO/CELE/PONE	61	55	15	129
CPS234	PIPO/CELE/FEID-AGSP	51	48	11	365
CPS241	PIPO/PUTR/AGSP	75	86	30	178
CPS312	PIPO/PUTR-CEVE/CAPE	84	94	55	71
	Series mean	**70**	**64**	**26**	**246**

Series: Lodgepole pine (PICO)		**SI**	**GBA**	**Ft³**	**Herbage**
CLG311	PICO/STOC-BASIN	62	44	20	12
CLG314	PICO/STOC-LUCA-PUM	70	69	35	50
CLM211	PICO/ARUV-PUM	79	74	42	33
CLS112	PICO/ARTR-RHYO	68	54	28	20

CLS211	PICO/PUTR/STOC-PUM	76	63	35	10
CLS213	PICO/PUTR/FORB-PUM	71	68	34	24
CLS215	PICO/RICE-PUTR/STOC	67	60	33	103
CLS216	PICO/PUTR-RHYO	60	72	30	10
CLS311	PICO/ARNE/STOC-PUM	51	36	14	10
CLS911	PICO/CEVE-ARPA-PUM	73	71	38	10
	Series mean	**68**	**61**	**31**	**28**
Series: Western juniper (JUOC)		**SI**	**GBA**	**Ft³**	**Herbage**
CJS211	JUOC/ARTR-AGSP-FEID	40	40	8	412*
CJS212	JUOC/ARTR/FEID-AGSP-N	45	45	10	375
CJS213	JUOC/ARTR/AGSP/POSE-S	35	35	6	266
CJS231	JUOC/ARTR-HODU/AGSP	50	45	11	238
CJS232	JUOC/ARTR-CHVI/FEID	45	40	9	400
	Series mean	**42**	**40**	**9**	**338**
	Formation mean	**65**	**59**	**22**	**223**
	***Estimated**				

***Formation: IIIA1c*—Broad-leaved evergreen shrubland.**

Series: Mountain-mahogany (CELE)		**SI**	**GBA**	**Ft³**	**Herbage**
SD49	CELE				366
SD4111	CELE/FEID-AGSP				363
	Formation mean				**365**

Formation: IIIB3a—Temperate deciduous shrubland.

Series: Common snowberry (SYAL)		**SI**	**GBA**	**Ft³**	**Herbage**
SM3111	SYAL-ROSA				55
SM31	SYAL				320
	Series mean				**187**
Series: Mountain snowberry (SYOR)		**SI**	**GBA**	**Ft³**	**Herbage**
SM32	SYOR				
	Series mean				**60**
Series: Thimbleberry (RUPA)		**SI**	**GBA**	**Ft³**	**Herbage**
SM5911	RUPA/POPH				
	Series mean				**250**
Series: Sitka alder (ALSI)		**SI**	**GBA**	**Ft³**	**Herbage**
SM8111	ALSI (ROCKY SOIL)				
	Series mean				**50**

Series: Vine maple (ACCI)		SI	GBA	Ft³	Herbage
SM8112	ACCI (ROCKY SOIL)				50
NTS111	ACCI (TALUS)				10
	Series mean				**30**
Series: Ninebark (PHMA)		**SI**	**GBA**	**Ft³**	**Herbage**
SM19	PHMA				195
SM1111	PHMA-SYAL				213
	Series mean				**204**
Series: Douglas spiraea (SPDO)		**SI**	**GBA**	**Ft³**	**Herbage**
SW4122	SPDO-VAUL/CAREX (HYDRIC)				400
SW4123	SPDO-SALIX/CAREX				800
	Series mean				**600**
Series: Mountain alder (ALIN)		**SI**	**GBA**	**Ft³**	**Herbage**
SW2211	ALIN-SYAL				839
SW2212	ALIN-SPDO				450
SW2213	ALIN-SPRING				1633
W2911	ALIN				1050
	Series mean				**993**
Series: Wetland willow (Salix-wet)		**SI**	**GBA**	**Ft³**	**Herbage**
SW1111	SALIX/POPR				1500
SW1112	SALIX/CALA3				1175
SW1113	SALIX/CAEQ				1805
SW1114	SALIX/CAAQ				1900
SW1115	SALIX/CAS13				2378
SW1116	SALIX/CARO2				2233
	Series mean				**1832**
Series: Bog huckleberry (VAOC2)		**SI**	**GBA**	**Ft³**	**Herbage**
SW4111	VAOC2/CAS13				1333
SW4112	VAOC2/ELPA2				900
SW4121	VACCI-SPDO/GRASS				350
	Series mean				**861**
	Formation mean				**506**

***Formation: III3b*—Subalpine deciduous shrubland.**

Series: Mountain heath (PHEM)		SI	GBA	Ft³	Herbage
SS1911	PHEM				
	Formation mean				**282**

Formation: VB1e—Medium-tall grassland, evergreen trees, semideciduous shrubs.

Series: Western juniper (JUOC)		SI	GBA	Ft³	Herbage
CJG111	JUOC/AGSP-FEID				363
CJS111	JUOC/ARAR/AGSP-FEID				411
CJS112	JUOC/ARAR/FEID				350
CJS226	JUOC/ARTR/AGSP-FLAT				400
CJS291	JUOC/CHVI-ARTR/AGCR				529
CJS292	JUOC/CHVI-ARTR/AGIN				363
CJS311	JUOC/PUTR/AGSP-FEID				240
CJS321	JUOC/PUTR/FEID-AGSP				358
CJSB11	JUOC/ARTR/FEID-AGSP-MOUND				388
	Series mean				**366**
	Formation mean				**366**

***Formation: VB2c*—Medium-tall grassland with broad-leaved deciduous shrubs.**

Series: Bitterbrush (PUTR)		SI	GBA	Ft³	Herbage
SD3111	PUTR/FEID-AGSP				520
SD3112	PUTR/AGSP				535
SD31	PUTR				375
	Series mean				**476**
Series: Netleafed hackberry (CERE2)		**SI**	**GBA**	**Ft³**	**Herbage**
SD5611	CERE2/AGSP				
	Series mean				**150**
Series: Smooth sumac (RHGL)		**SI**	**GBA**	**Ft³**	**Herbage**
SD6121	RHGL/AGSP				
	Series mean				**360**
Series: Syringa (PHLE2)		**SI**	**GBA**	**Ft³**	**Herbage**
NTS111	PHLE2-TALUS				
	Series mean				**10**
	Formation mean				**173**

***Formation: VB2b*—Medium-tall grassland, semideciduous shrubs.**

Series: Low sagebrush (ARAR)		SI	GBA	Ft³	Herbage
SD1911	ARAR/AGSP-FEID				411
SD1912	ARAR/FEID/POSA3				179
SD1913	ARAR/FEID/SIHY				245
	Series mean				**278**

Series: Big sagebrush (ARTR)		SI	GBA	Ft³	Herbage
SD2121	ARTR/AGSP				403
SD2311	ARTR/ARCA/POCU				1200
SD2911	ARTR/AGSP/FEID				412
SD2912	ARTR/FEID-AGSP				244
SD2913	ARTR-PUTR/FEID-AGSP				200
SD2915	ARTRV/CAGE				350
SD2916	ARTRV-PUTR/FEID				425
SD2917	ARTRV-SYOR				873
	Series mean				**513**
Series: Squaw apple (PERA3)		**SI**	**GBA**	**Ft³**	**Herbage**
SD30	PERA3-SYOR				
	Series mean				**220**
Series: Spiny greenbush (GLNE)		**SI**	**GBA**	**Ft³**	**Herbage**
SD65	GLNE/AGSP				
	Series mean				**290**
	Formation mean				**359**

***Formation: VB4a*—Medium-tall grassland mainly sod grasses.**

Series: Blue wildrye (ELGL)		SI	GBA	Ft³	Herbage
GM4121	ELGL-BROMUS				
	Formation mean				**1400**

***Formation: VB4b*—Medium-tall grassland, mainly bunchgrasses.**

Series: Bluebunch wheatgrass (AGSP)		SI	GBA	Ft³	Herbage
GB1911	AGSP-SPCR-ARL03				655
GB4111	AGSP/ERHE				420
GB4112	AGSP/POSA3/SCAN				385
GB4113	AGSP/POSA3-BASALT				685
GB4114	AGSP/POSA3/ASCU4				420
GB4115	AGSP/POSA3/ERPU				665
GB4116	AGSP/POSA3-GRANITE				550
GB4117	AGSP/POSA3/PHCO2				860
GB4118	AGSP/POSA3/OPPO				380
GB4121	AGSP/POSA3				856
GB4122	AGSP-FEID				787
GB4911	AGSP/POSA3-SHAL/GENT				363
GB4912	AGSP-FEID-DEEP/GENT				679
GB4913	AGSP/POSA3-SHAL/STEEP				300
GB4914	AGSP-FEID-DEEP/STEEP				434
	Series mean				**562**

Series: Sand dropseed (SPCR)		SI	GBA	Ft³	Herbage
GB1121	SPCR/POSA3				1025
GB1211	SPCR-TERRACE				690
	Series mean				**857**
Series: Basin wildrye (ELCI)		**SI**	**GBA**	**Ft³**	**Herbage**
GB7111	ELCI				
	Series mean				**2400**
Series: Idaho fescue (FEID)		**SI**	**GBA**	**Ft³**	**Herbage**
GB5121	FEID-SYAL-AGSP				760
GB5911	FEID/KOCR-RIDGE				1080
GB5912	FEID/KOCR-MOUND				1430
GB5013	FEID/KOCR-HIGH				850
GB5914	FEID/KOCR-LOW				990
GB5915	FEID-AGSP-RIDGE				360
GB5916	FEID-AGSP/LUSE				805
GB5917	FEID-AGSP/BASA				675
GB5918	FEID-AGSP/PHCO2				670
GB5919	FEID-SYAL/KOCR				630
GB5920	FEID/DAIN-CAREX				520
GB5921	FEID-CAHO				670
GB5922	FEID-CAREX				690
	Series mean				**791**
Series: Green fescue (FEVI)		**SI**	**GBA**	**Ft³**	**Herbage**
GS1111	FEVI-CAHO				960
GS1112	FEVI/LULA2				900
	Series mean				**930**
	Formation mean				**1108**

***Formation: VC1e*—Short grassland, evergreen trees, semideciduous shrubs.**

Series: Whitebark pine (PIAL)		SI	GBA	Ft³	Herbage
CAG111	ABLA/PIAL/CAGE				273
CAG112	PIAL/CARU				250
	Series mean				**262**
Series: Western juniper (JUOC)		**SI**	**GBA**	**Ft³**	**Herbage**
CJS811	JUOC/ARRI/POSA3				
	Series mean				**207**
Series: Ponderosa pine (PIPO)		**SI**	**GBA**	**Ft³**	**Herbage**
CPS112	PIPO/PUTR-ARTR/SIHY				
	Series mean	**69**	**36**	**17**	**31**

Series: Lodgepole pine (PICO)		SI	GBA	Ft³	Herbage
CLG413	PICO/CAPE-STOC-BASIN				
	Series mean	**61**	**32**	**13**	**12**
	Formation mean	**65**	**34**	**15**	**128**

***Formation: VC2b*—Short grassland, semideciduous shrubs.**

Series: Big sagebrush (ARTR)		SI	GBA	Ft³	Herbage
SD2123	ARTR/STCO				213
SD2914	ARTR/STOC-RHYO				40
	Series mean				**126**

Series: Bitterbrush (PUTR)		SI	GBA	Ft³	Herbage
SD3311	PUTR/STOC-PUM				
	Series mean				**112**

Series: Rigid sagebrush (ARRI)		SI	GBA	Ft³	Herbage
SD9111	ARRI/POSA3-SCAB				207
SD9131	ARRI/POSA3-LOMA				225
	Series mean				**215**

Series: Low sagebrush (ARAR)		SI	GBA	Ft³	Herbage
SD9211	ARAR/POSA3-HAST				150
SD9212	ARAR/POSA3-DAUN				125
SD9221	ARAR/POSA3				181
SS4921	ARAR/FERU				115
	Series mean				**143**

Series: Alpine big sagebrush (ARTRV)		SI	GBA	Ft³	Herbage
SS4911	ARTRV/CAGE				
	Series mean				**383**

Series: Buckwheat (ERUM)		SI	GBA	Ft³	Herbage
FM9111	ERDO/POSA3				315
FM9112	ERST2/POSA3				118
FM9113	ERUM-RIDGE				40
SD9323	ERUM/STIPA-PUM				10
SD9322	ERMI-PHOR				26
	Series mean				**102**
	Formation mean				**178**

***Formation: VC5a*—Short grassland, mainly sodgrasses**

Series: Subalpine elk sedge (CAGE-S)		SI	GBA	Ft³	Herbage
GS3911	CAGE-ALPINE				
	Formation mean				**391**

***Formation: VC5b*—Short grassland, mainly bunchgrasses.**

Series: Sandberg's bluegrass (POSA3)		**SI**	**GBA**	**Ft³**	**Herbage**
GB9111	POSA3-DAUN				160
GB99	POSA3-FEMI				70
	Series mean				**115**
Series: Subalpine Idaho fescue (FEID-S)		**SI**	**GBA**	**Ft³**	**Herbage**
GS1211	FEID-ALPINE				
	Series mean				**254**
	Formation mean				**184**

***Formation: VC6a*—Mesophytic grasslands, mainly sodgrasses (meadows).**

Series: Nebraska sedge (CANE)		**SI**	**GBA**	**Ft³**	**Herbage**
MM2912	CANE				2222
MM3911	CAREX-CABI				2100
MW1911	CANE-JUBA				3000
	Series mean				**2441**
Series: Tufted hairgrass (DECA)		**SI**	**GBA**	**Ft³**	**Herbage**
MM19	DECA-JUBA				1947
MM1911	DECA-CANE				2000
MM1912	DECA				1362
MM1921	DECA-MOIST CAREX				1060
MM1922	CECA-WET CAREX				1640
	Series mean				**1602**
Series: Kentucky bluegrass (POPR)		**SI**	**GBA**	**Ft³**	**Herbage**
MD3111	POPR-DRY MEADOW				1400
MD3112	POPR-RIDGE				1100
MM90	POPR-CABU				2009
	Series mean				**1503**
Series: Cusick's bluegrass (POCU)		**SI**	**GBA**	**Ft³**	**Herbage**
MD1911	POCU-DRY MEADOW				
	Series mean				**1333**
Series: Slender bog sedge (CALA4)		**SI**	**GBA**	**Ft ³**	**Herbage**
MW2911	CALA4				
	Series mean				**1750**
Series: Woolly sedge (CALA3)		**SI**	**GBA**	**Ft³**	**Herbage**
MM2911	CALA3				
	Series mean				**2040**

Series:Widefruit sedge (CAEU)		SI	GBA	Ft³	Herbage
MM2913	CAEU				
	Series mean				**2038**
Series: Aquatic sedge (CAAQ)		**SI**	**GBA**	**Ft³**	**Herbage**
MM2914	CAAQ				
	Series mean				**2930**
Series: Shortbeaked sedge (CASI2)		**SI**	**GBA**	**Ft³**	**Herbage**
MM2915	CASI2				
	Series mean				**1750**
Series: Few-flowered spikerush (ELPA2)		**SI**	**GBA**	**Ft³**	**Herbage**
MW4911	ELPA2				
	Series mean				**698**
Series: Creeping spikerush (ELPA)		**SI**	**GBA**	**Ft³**	**Herbage**
MW4912	ELPA				
	Series mean				**1571**
Series: Smallfruited bulrush (SCMI)		**SI**	**GBA**	**Ft³**	**Herbage**
MW1921	SCMI (CAAM)				1989
MT1911	CAREX-SCIRPUS (HYDRIC)				2250
	Series mean				**2120**
Series: Sitka sedge (CASI3)		**SI**	**GBA**	**Ft³**	**Herbage**
MW1922	CASI3				
	Series mean				**2722**
Series: Inflated sedge (CAVE)		**SI**	**GBA**	**Ft³**	**Herbage**
MW1923	CAVE				
	Series mean				**2238**
Series: Beaked sedge (CARO2)		**SI**	**GBA**	**Ft³**	**Herbage**
MW1924	CARO2				
	Series mean				**2081**
	Formation mean				**2003**

***Formation: VC6b*—Subalpine meadows.**

Series: Black alpine sedge (CANI2)		SI	GBA	Ft³	Herbage
MS2111	CANI2				
	Series mean				**1130**

Series: Holm's sedge (CASC5)		SI	GBA	Ft³	Herbage
MS2112	CASC5-CANI2-DECA				433
MS3111	CASC5				1625
	Series mean				**1029**
Series: Brewer's sedge (CABR)		**SI**	**GBA**	**Ft³**	**Herbage**
MS1111	CABR				
	Series mean				**688**
	Formation mean				**949**

***Formation: VD2a*—Perennial flowering forbs.**

Series: Subalpine fleeceflower (POPH)		SI	GBA	Ft³	Herbage
FS5911	POPH-ALPINE				
	Series mean				**200**
Series: Cusick's camas (CACU)		**SI**	**GBA**	**Ft³**	**Herbage**
FW3911	CACU-SEEP				
	Series mean				**1020**
Series: Wallowa lewisia (LECO)		**SI**	**GBA**	**Ft³**	**Herbage**
FX4111	LECOW-RIM				
	Series mean				**25**
Series: Queenscup beadlily (CLUN)		**SI**	**GBA**	**Ft³**	**Herbage**
FW4111	CLUN (ALIN)				
	Series mean				**528**
Series: Arrowleaf groundsel (SETR)		**SI**	**GBA**	**Ft³**	**Herbage**
FW4211	SETR				
	Series mean				**586**
Series: Beargrass (XETE)		**SI**	**GBA**	**Ft³**	**Herbage**
FW2911	XETE-FERU				
	Series mean				**875**
Series: Vetch (VISA)		**SI**	**GBA**	**Ft³**	**Herbage**
FM3011	VISA-ERPE-ELGL				
	Series mean				**1200**
Series: False hellebore (VERAT)		**SI**	**GBA**	**Ft³**	**Herbage**
FW5111	VERAT-HELA				
	Series mean				**2400**

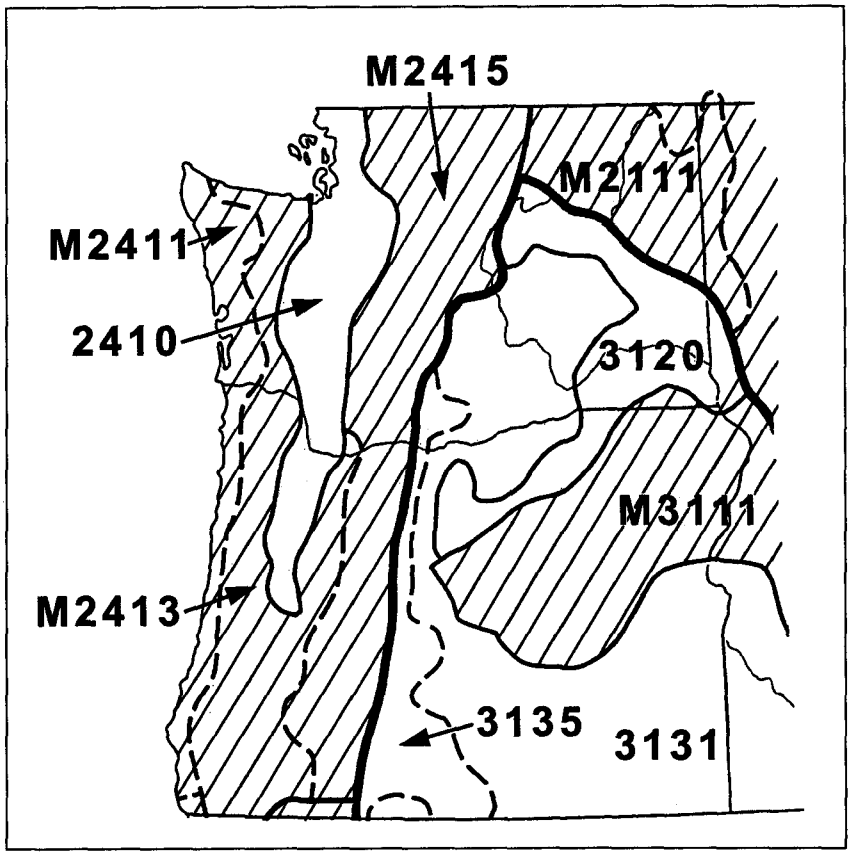
Series: Eriophyllum (ERIOP)			SI	GBA	Ft³	Herbage
FW9911	ERLA-PHHE					
	Series mean					**150**
	Formation mean					**776**

Comparison of series occurring in more than one formation—

Series	Formation	Description	SI	GBA	Ft³	Herbage
ABAM	IA9a	Giant conifer forest	142	494	229	250
	IA9c	Closed conifer, conical crowns	95	355	126	210
PSME	IA9a	Giant conifer forest	128	320	170	102
	IA9b	Closed conifer, rounded crowns	85	179	68	161
	IIA2a	Conifer woodland	78	69	24	279
ABGR	IA9a	Giant conifer forest	140	360	177	169
	IA9b	Closed conifer, rounded crowns	93	243	93	226
TSHE	IA9a	Giant conifer forest	140	473	245	745
	IA9b	Closed conifer, rounded crowns	101	336	126	348
ABCO	IA9a	Giant conifer forest	129	186	120	50
	IA9b	Closed conifer, rounded crowns	91	168	64	135
PICO	IA9b	Closed conifer, rounded crowns	75	102	42	408
	IIA2a	Conifer woodland	68	61	31	28
	VC1e	Short grassland with conifers	61	32	13	12
PIPO	IA9b	Closed conifer, rounded crowns	77	104	36	307
	IIA2a	Conifer woodland	70	64	26	246
	VC1e	Short grassland with conifers	69	36	17	31
JUOC	IIA2a	Conifer woodland	42	40	9	338
	VB1e	Medium-tall grassland with conifers				380
	VC1e	Short grassland with conifers				207
ARAR	VB2b	Medium-tall grassland with shrubs				278
	VC2b	Short grassland with shrubs				143
ARTR	VB2b	Medium-tall grassland with shrubs				513
	VC2b	Short grassland with shrubs				126

Characterization of Bailey's ecoregions, Oregon and Washington—

M2111 Douglas-fir forest
M2411 Sitka spruce-cedar-hemlock forest
M2413 Cedar—hemlock—Douglas-fir forest
M2415 Silver fir—Douglas-fir forest
M3111 Grand fir—Douglas-fir forest
2410 Willamette-Puget forest
3120 Palouse grassland
3131 Sagebrush-wheatgrass
3135 Ponderosa pine-shrub forest



The following ecoregions have been sampled partially to completely by the Ecology Program of the USDA Forest Service. Ecoregions 3135 and M3111 in Oregon have been completely sampled. Ecoregion M2111 has been sampled for forested plant associations. The remainder will not be completely sampled because only parts are under National Forest administration.

Herbage production is based on all data and is an average of the formations. Tree productivity is an average of those series capable of growing trees.

Ecoregion	Name	SI	GBA	Ft^3	Herbage
M2111	Douglas-fir	68	194	76	289
M2411	Sitka spruce-cedar-hemlock	127	521	269	905
M2413	Cedar—hemlock—Douglas-fir	117	337	168	966
M2415	Silver fir—Douglas-fir	107	341	205	855
M3111	Grand fir—Douglas-fir	60	105	35	409
3135	Ponderosa shrub forest	86	127	65	333

Ecoregion by Formation and Series—

Ecoregion	Name	SI	GBA	Ft^3	Herbage
M2111	**Douglas-fir**	68	194	76	289
IA9b		84	331	111	74
	Grand fir	84	278	93	54
	Douglas-fir	78	73	69	87
	Western redcedar	84	444	148	99
	Western hemlock	91	431	135	53
IA9c		68	219	100	216
	Subalpine fir	72	195	79	118
	Engelmann spruce	64	244	122	315
IB3b	Quaking aspen	54	54	68	616
IIA2a	Douglas-fir	65	71	25	250
M2411	**Sitka spruce-cedar-hemlock**	127	521	269	905
IA9a		145	599	345	1261
	Sitka spruce	168	697	464	1208
	Western hemlock	122	502	245	1315
IA9b	Western hemlock	109	443	193	550
M2413	**Cedar—hemlock—Douglas-fir**	117	337	168	966
IA9a		134	393	219	364
	Douglas-fir	130	309	179	158
	Western hemlock	141	438	250	634
	Grand fir	132	433	229	301

Ecoregion	Name	SI	GBA	Ft^3	Herbage
IA9b		100	281	117	292
	Douglas-fir	110	300	139	65
	Western hemlock	104	330	140	450
	Grand fir	86	213	73	360
IIIB3a					256
	Thimbleberry				250
	Sitka alder				50
	Vine maple				30
	Douglas' spiraea				600
	Bog huckleberry				350
VB4a	Blue wildrye				1400
VC6a					2175
	Sedge				2100
	Bulrush				2250
VD2a					1250
	Vetch				1200
	False hellebore				2400
	Eriophyllum				150
M2415	***Silver fir—Douglas-fir***	107	341	205	855
IA9A	Silver fir	128	429	288	455
IA9c		87	253	123	245
	Silver fir	86	296	141	257
	Shasta red fir	91	218	118	69
	Mountain hemlock	85	245	111	348
IIIB3a					256
	Bog huckleberry				350
	Sitka alder				50
	Vine maple				30
	Douglas' spiraea				600
VC6a					2175
	Bulrush				2250
	Sedge				2100
VD2a					1156
	Beargrass				875
	Vetch				1200
	False hellebore				2400
	Eriophyllum				150
M3111	**Grand fir—Douglas-fir**	60	105	35	409
IA9b		75	133	53	242
	Douglas-fir	79	147	53	283
	Grand fir	86	202	91	204
	Lodgepole pine	61	100	38	197
	Ponderosa pine	76	82	29	285

Ecoregion	Name	SI	GBA	Ft^3	Herbage
IA9c		71	210	66	100
	Subalpine fir	72	161	57	120
	Mountain hemlock	70	260	75	80
IIA2a		53	50	15	463
	Ponderosa pine	66	61	24	514
	Western juniper	40	40	8	412
IIIA1c	Mountain-mahogany				366
IIIB3a					147
	Ninebark				195
	Common snowberry				187
	Mountain snowberry				60
VB1e					366
	Western juniper				366
VB2c					173
	Netleaf hackberry				150
	Smooth sumac				360
	Syringa				10
VB2b					393
	Big sagebrush				412
	Low sagebrush				411
	Mountain big sagebrush				549
	Bitterbrush				476
	Squaw apple				220
	Spiny greenbush				290
VB4b					785
	Bluebunch wheatgrass				562
	Sand dropseed				857
	Idaho fescue				791
	Basin wildrye				2400
	Green fescue				930
VC1e					235
	Western juniper				207
	Whitebark pine				262
VC2b					231
	Rigid sagebrush				207
	Subalpine sagebrush				383
	Buckwheat				102
VC5a	Subalpine elk sedge				391
VC5b					207
	Sandberg's bluegrass				160
	Subalpine Idaho fescue				25
VC6a					1583
	Tufted hairgrass				1350
	Kentucky bluegrass				1200

Ecoregion	Name	SI	GBA	Ft³	Herbage
	Nebraska sedge				2200
VD2a					415
	Cusick's camas				1020
	Wallowa lewisia				25
	Subalpine fleeceflower				200
3135	**Ponderosa shrub**	86	127	65	333
IA9a		123	214	141	43
	Douglas-fir	123	217	150	10
	White fir	122	211	132	75
IA9b		81	127	64	265
	Ponderosa pine	79	100	51	250
	White fir	88	157	88	135
	Lodgepole pine	75	124	52	409
IB3b	Quaking aspen	99	205	83	1188
IIA2a		63	56	25	148
	Ponderosa pine	77	66	35	87
	Lodgepole pine	68	61	31	20
	Western juniper	43	40	9	338
IIIB3a					1229
	Mountain alder				993
	Wetland willow				1832
	Bog huckleberry				861
IIIB3b	Mountain heath				282
VB1e		65	32	13	22
	Ponderosa pine	69	36	17	31
	Lodgepole pine	61	32	13	12
VB2b					217
	Low sagebrush				212
	Big sagebrush				222
VC2b					102
	Big sagebrush				126
	Bitterbrush				112
	Rigid sagebrush				225
	Low sagebrush				130
	Buckwheat				26
VC6a					1924
	Nebraska sedge				2222
	Tufted hairgrass				1362
	Kentucky bluegrass				2009
	Cusick's bluegrass				1333
	Slender bog sedge				1750
	Woolly sedge				2040
	Widefruit sedge				2038
	Aquatic sedge				2930
	Shortbeaked sedge				1750
	Few-flowered spikerush				698
	Creeping spikerush				1571
	Smallfruited bulrush				2120

Ecoregion	Name	SI	GBA	Ft³	Herbage
	Sitka sedge				2722
	Inflated sedge				2238
	Beaked sedge				2081
VC6b					949
	Black alpine sedge				1130
	Holm's sedge				1029
	Brewer's sedge				688
VD2a					557
	Queenscup beadlily				528
	Arrowleaf groundsel				586

Characteristics of formations by ecoregion, Oregon and Washington—

Formation	Ecoregion Name	SI	GBA	Ft³	Herbage
IA9a Giant conifer forest					
2411	Sitka spruce-cedar-hemlock	127	521	269	1115
2413	Cedar—hemlock—Douglas-fir	134	393	219	364
2415	Silver fir—Douglas-fir	128	429	288	445
3135	Ponderosa shrub	123	214	141	43
IA9b Closed conifer, rounded crowns					
2111	Douglas-fir	84	333	111	74
2411	Sitka spruce-cedar-hemlock	109	443	193	550
2413	Cedar—hemlock—Douglas-fir	100	281	117	292
3111	Grand fir—Douglas-fir	75	133	53	242
3135	Ponderosa shrub	81	127	64	265
IA9c Closed conifer, conical crowns					
2111	Douglas-fir	68	219	100	216
2415	Silver fir—Douglas-fir	87	253	123	245
3111	Grand fir—Douglas-fir	71	210	66	100
IIA2a Conifer woodland, rounded crowns					
2111	Douglas-fir	65	71	25	250
3111	Grand fir—Douglas-fir	53	50	15	463
3135	Ponderosa shrub	63	56	25	148
IIIB3a Temperate, deciduous shrubland					
2413	Cedar—hemlock—Douglas-fir				256
2415	Silver fir—Douglas-fir				256
3111	Grand fir—Douglas-fir				147
3135	Ponderosa shrub				1229

VB1e Medium-tall grassland, conifers					
3111	Grand fir—Douglas-fir	43	28	6	408
3135	Ponderosa shrub	65	32	13	22
VC2b Short grasslands, semideciduous shrubs					
3111	Grand fir—Douglas-fir				393
3135	Ponderosa shrub				102
VC6a Mesophytic grasslands (meadows)					
2413	Cedar—hemlock—Douglas-fir				2175
2415	Silver fir—Douglas-fir				2175
3111	Grand fir—Douglas-fir				1583
3135	Ponderosa shrub				1924
VD2a Perennial flowering forbs					
2413	Cedar-hemlock-Douglas-fir				1250
2415	Silver fir—Douglas-fir				1156
3111	Grand fir—Douglas-fir				415
3135	Ponderosa shrub				557

Appendix 4

Potential Natural Vegetation (Küchler Types)

Küchler, A.W. 1964. Manual to accompany the map potential natural vegetation of the conterminous United States. Special Publ. 36. New York: American Geographical Society. 152 p. (2d ed. rev. map 1975).*

U.S. Department of the Interior, Geological Survey. 1969. Sheet 90, (one map). Washington, DC.

The kinds of potential natural vegetation on the 1969 map are different from those in the 1964 manual. These differences are shown under "1969" and "1964" on the following pages.

*Recent revisions of the manual have a 1975 map that contains the same potential natural vegetation types as the 1964 map. Some type boundaries were changed, however.

Map dated: 1969	1964		
K1	K1		**SPRUCE-CEDAR-HEMLOCK FOREST (*PICEA-THUJA-TSUGA*)**
		Physiognomy:	Dense forest of tall needle-leaf evergreen trees, rarely with an admixture of broadleaf deciduous trees.
		Dominants:	Sitka spruce (*Picea sitchensis*) Western redcedar (*Thuja plicata*) Western hemlock (*Tsuga heterophylla*)
		Other components:	*Abies grandis, Alnus rubra, Chamaecyparis lawsoniana* (southern part), *Pseudotsuga menziesii*
		Occurrence:	Along the coasts of Washington, Oregon, and British Columbia; occasionally on the western slopes of the Cascade Range
K2	K2		**CEDAR—HEMLOCK—DOUGLAS-FIR FOREST (*THUJA-TSUGA-PSEUDOTSUGA*)**
		Physiognomy:	Dense forests of very tall needle-leaf evergreen trees
		Dominants:	Douglas-fir (*Pseudotsuga menziesii*) Western redcedar (*Thuja plicata*) Western hemlock (*Tsuga heterophylla*)
		Other components:	*Abies grandis, Acer circinatum, A. macrophyllum, Berberis nervosa, Gaultheria shallon, Rubus spectabilis*; in southernmost part only: *Pinus lambertiana, P. ponderosa*
		Occurrence:	Pacific Northwest from the Canadian border into California, mostly west of the crest of the Cascade Range
K3	K3		**SILVER FIR—DOUGLAS-FIR FOREST (*ABIES-PSEUDOTSUGA*)**
		Physiognomy:	Dense forests of tall needle-leaf evergreen trees with patches of shrubby undergrowth
		Dominants:	Pacific silver fir (*Abies amabilis*) Douglas-fir (*Pseudotsuga menziesii*)
		Other components:	*Abies grandis, A. procera, Acer circinatum, Arctostaphylos nevadensis, Pachystima myrsinites, Rhododendron macrophyllum, Thuja plicata, Vaccinium membranaceum*
		Occurrence:	Western slopes of Cascade Range, Olympic Mountains

K4	**K4**	**FIR-HEMLOCK FOREST (*ABIES-TSUGA*)**
	Physiognomy:	Dense or medium-dense forests of low to medium tall needle-leaf evergreen trees
	Dominants:	Subalpine fir (*Abies lasiocarpa*) Mountain hemlock (*Tsuga mertensiana*)
	Other components:	*Abies amabilis, Picea engelmannii, Pinus albicaulis, P. contorta, P. monticola, Pseudotsuga menziesii, Vaccinium* spp., *Xerophyllum tenax*
	Occurrence:	Cascade Range, Olympic Mountains
K5	**K5**	**MIXED CONIFER FOREST (*ABIES-PINUS-PSEUDOTSUGA*)**
	Physiognomy:	Tall, needle-leaf evergreen forest, occasionally with broadleaf trees and shrubs
	Dominants:	White fir (*Abies concolor*) Incense-cedar (*Calocedrus decurrens*) Sugar pine (*Pinus lambertiana*) Ponderosa pine (*Pinus ponderosa*) Douglas-fir (*Pseudotsuga menziesii*)
	Other components:	*Arctostaphylos mariposa, A. patula, Ceanothus intergerrimus, Chamaebatia foliolosa, Pseudotsuga macrocarpa* (southern part only, where it may dominate), *Quercus chrysolepis, Q. kelloggii, Ribes nevadense, R. roezlii, Rubus parviflorus*
	Occurrence:	Sierra Nevada, northern California Coast Range extending into southwestern Oregon; high elevations of southern California
K6	**K6**	**REDWOOD FOREST (*SEQUOIA-PSEUDOTSUGA*)**
	Physiognomy:	Dense forests of very tall needle-leaf evergreen trees, sometimes with much undergrowth
	Dominants:	Douglas-fir (*Pseudotsuga menziesii*) Redwood (*Sequoia sempervirens*)
	Other components:	*Abies grandis, Gaultheria shallon, Lithocarpus densiflorus, Myrica californica, Oxalis oregona, Polystichum munitum, Rhododendron macrophyllum, Tsuga heterophylla, Vaccinium ovatum, Vancouveria parviflora, Whipplea modesta*
	Occurrence:	Seaward slopes of outer Coast Ranges of northern California and adjacent Oregon

K7	**K7**	**RED FIR FOREST (*ABIES*)**
	Physiognomy:	Tall dense forests of needle-leaf evergreen trees with patches of shrubby undergrowth
	Dominants:	Red fir (*Abies magnifica shastensis*)
	Other components:	*Castanopsis sempervirens, Ceanothus cordulatus, Ipomopsis aggregata, Pinus contorta, P. jeffrey, P. monticola, Populus tremuloides*
	Occurrence:	Sierra Nevada of California, southern Oregon Cascades
K10	**K10**	**PONDEROSA SHRUB FOREST (*PINUS*)**
	Physiognomy:	Moderately dense to open forest of tall needle-leaf evergreen trees with shrubs and some grass
	Dominants:	Ponderosa pine (*Pinus ponderosa*)
	Other components:	*Agropyron spicatum, Arctostaphylos patula, A. parryana* var. *pinetorum, Calamagrostis rubsecens, Ceanothus velutinus, Cercocarpus ledifolius, Festuca idahoensis, Holodiscus discolor, Physocarpus capitatus, Pseudotsuga menziesii, Purshia tridentata, Symphoricarpos* spp.
	Occurrence:	Oregon, northern California
K10	**K11**	**WESTERN PONDEROSA FOREST (*PINUS*)**
	Physiognomy:	Moderately dense to open forests of tall needle-leaf evergreen trees with shrubs and some grass
	Dominants:	Ponderosa pine (*Pinus ponderosa*)
	Other components:	*Achillea millefolium, Agropyron spicatum, Arctostaphylos nevadensis* (southern part), *A. uva-ursi, Carex geyeri, Festuca idahoensis, Hieracium* spp., *Lupinus* spp., *Poa sandbergii, Purshia tridentata, Symphoricarpos albus* (northern part), *Calamagrostis rubescens*
	Occurrence:	Northern Rocky Mountains, Washington, and Oregon
K11	**K12**	**DOUGLAS-FIR FOREST (*PSEUDOTSUGA*)**
	Physiognomy:	Medium dense forest of medium tall needle-leaf evergreen trees
	Dominants:	Douglas-fir (*Pseudotsuga menziesii*)
	Other components:	*Abies concolor, Larix occidentalis, Physocarpus malvaceus, Picea pungens, P. glauca* (northern part), *Pinus contorta, P. ponderosa* (lower elevations), *Populus tremuloides*
	Occurrence:	Northern Rocky Mountains, Washington and Oregon

K12	**K13**	**CEDAR-HEMLOCK-PINE FOREST (*THUJA-TSUGA-PINUS*)**	
	Physiognomy:	Tall evergreen needle-leaf forest, often very dense	
	Dominants:	Western white pine (*Pinus monticola*) Western redcedar (*Thuja plicata*) Western hemlock (*Tsuga heterophylla*)	
	Other components:	*Abies grandis, Larix occidentalis, Pinus ponderosa* (lower elevations), *Pseudotsuga menziesii*	
	Occurrence:	Northern Rocky Mountains	
K13	**K14**	**GRAND FIR—DOUGLAS-FIR FOREST (*ABIES-PSEUDOTSUGA*)**	
	Physiognomy:	Tall, needle-leaf evergreen forest	
	Dominants:	Grand fir (*Abies grandis*) Douglas-fir (*Pseudotsuga menziesii*)	
	Other components:	*Larix occidentalis, Pinus monticola, Populus tremuloides*	
	Occurrence:	Idaho, eastern Oregon and Washington	
K14	**K15**	**WESTERN SPRUCE-FIR FOREST *(PICEA-ABIES)***	
	Physiognomy:	Dense to open forests of low to medium-tall needle-leaf evergreen trees; open forests with a synusia of shrubs and herbaceous plants	
	Dominants:	Subalpine fir (*Abies lasiocarpa*) Engelmann spruce (*Picea engelmannii*)	
	Other components:	*Arctostaphylos uva-ursi, Arnica cordifolia, Calamagrostis canadensis, Carex* spp., *Larix lyallii, Menziesia ferruginea, Pinus albicaulis* (northern part), *P. contorta, Populus tremuloides, Pseudotsuga menziesii* (lower elevations), *Shepherdia canadensis, Symphoricarpos albus, Tsuga mertensiana* (western part), *Vaccinium* spp., *Xerophyllum tenax*	
	Occurrence:	High altitudes of northern Rocky Mountains, Washington, and Oregon	
K49	**K24**	**JUNIPER STEPPE WOODLAND (*JUNIPERUS-ARTEMISIA-AGROPYRON*)**	
	Physiognomy:	Open groves of low, often shrublike needle-leaf evergreen trees with an open to medium-dense understory of low shrubs and grass	
	Dominants:	Bluebunch wheatgrass (*Agropyron spicatum*) Big sagebrush (*Artemisia tridentata*) Western juniper (*Juniperus occidentalis*)	

		Other components:	*Artemis arbuscula, Balsamorhiza sagittata, Festuca idahoensis, Lithospermum ruderale, Lupinus sericeus, Poa secunda, Purshia tridentata, Sitanion* spp.
		Occurrence:	East of Cascade Range
(none)	**K25**	**ALDER-ASH FOREST (*ALNUS-FRAXINUS*)** (over 16 feet tall)	
		Physiognomy:	Usually dense forests of low to medium-tall broadleaf deciduous trees, often with a synusia of graminoids and forbs
		Dominants:	Red alder (*Alnus rubra*) Oregon ash (*Fraxinus latifolia*)
		Other components:	*Acer macrophyllum, Carex* spp., *Deschampsia caespitosa, Juncus* spp., *Populus trichocarpa, Symphoricarpos albus*
		Occurrence:	Oregon, Washington
K25	**K26**	**OREGON OAK WOODS (*QUERCUS*)** (over 16 feet tall)	
		Physiognomy:	Broadleaf deciduous forests of medium-tall trees, often with an undergrowth of grass and some shrubs
		Dominants:	Oregon white oak (*Quercus garryana*)
		Other components:	*Agrostis tenuis, Amelanchier* spp., *Arbutus menziesii* (southern part), *Bromus laevipes, Danthonia californica, Elymus glaucus, Festuca californica, F. rubra, Melica bulbosa, Rhus diversiloba*
		Occurrence:	Oregon and Washington
K25	**K29**	**CALIFORNIA MIXED EVERGREEN FOREST (*QUERCUS-ARBUTUS-PSEUDOTSUGA*)**	
		Physiognomy:	Medium-tall to tall broadleaf and needle-leaf evergreen forest with an admixture of broadleaf deciduous trees
		Dominants:	Madrone (*Arbutus menziesii*) Golden chinkapin (*Castanopsis chrysophylla*) Tanbark-oak (*Lithocarpus densiflorus*) Douglas-fir (*Pseudotsuga menziesii*) Canyon live oak (*Quercus chrysolepis*) Interior live oak (*Quercus wislizeni*) California laurel (*Umbellularia californica*) Oregon white oak (*Quercus garryana*)

		Other components:	*Acer macrophyllum, Aesculus californica, Arctostaphylos manzanita, Ceanothus parryi, C. thyrsiflorus, Cornus nuttallii, Quercus douglasii, Q. garryana, Q. kelloggii*
		Occurrence:	Northern California Coast Range, extending into Oregon
K29	**K34**	**MONTANE CHAPARRAL (*ARCTOSTAPHYLOS-CASTANOPSIS-CEANOTHUS*)**	
		Physiognomy:	Dense vegetation of broadleaf evergreen shrubs, occasionally with some needle-leaf evergreen and broadleaf deciduous trees
		Dominants:	Greenleaf manzanita (*Arctostaphylos patula*) Bush chinkapin (*Castanopsis sempervirens*) Snow bush (*Ceanothus cordulatus*)
		Other components:	*Abies magnifica, Arctostaphylos manzanita, A. nevedensis, A. viscida, Ceanothus velutinus, Pinus lambertiana, P. ponderosa, Quercus kelloggii, Q. vaccinifolia*
		Occurrence:	Northern California, southern Oregon
K31	**K37**	**MOUNTAIN-MAHOGANY OAK SCRUB (*CERCOCARPUS LEDIFOLIUS*)** (under 16 feet tall)	
		Physiognomy:	Dense to open vegetation of deciduous or semideciduous shrubs
		Dominants:	Mountain-mahogany (*Cercocarpus ledifolius*) Gambel oak (*Quercus gambelii*)
		Other components:	*Acer grandidentatum, Amelanchier utahensis, Arctostaphylos* spp., *Ceanothus velutinus, Cowania mexicana, Fallugia paradoxa, Pachystima myrsinites, Physocarpus malvaceus, Purshia tridentata, Quercus havardii, Q. turbinella, Q. undulata, Rhus trilobata, Symphoricarpos* spp.
		Occurrence:	Utah, Colorado, scattered in Nevada, northern California, eastern Oregon
K34	**K40**	**SALTBUSH-GREASEWOOD (*ATRIPLEX-SARCOBATUS*)**	
		Physiognomy:	Open stands of low shrubs and dwarf shrubs
		Dominants:	Shadscale (*Atriplex confertifolia*) Greasewood (*Sarcobatus vermiculatus*)

		Other components:	*Allenrolfea occidentalis, Artemisia spinescens, Atriplex* spp., *Distichlis spicatum, Eurotia lanata, Grayia spinosa, Kochia americana, Lycium copperi, Menodora spinescens* (western part), *Suaeda torreyana*
		Occurrence:	Great Basin and eastward to Wyoming, southward to New Mexico, west and north into Oregon and Washington
K42	**K49**	**TULE MARSHES (*SCIRPUS-TYPHA*)**	
		Physiognomy:	Tall graminoid vegetation
		Dominants:	Common tule (*Scirpus acutus*) California bulrush (*Scirpus californicus*) Olney bulrush (*Scirpus olneyi*) Tule (*Scirpus validus*) Cattail (*Typha domingensis*) Soft flag (*Typha latifolia*)
		Other components:	*Carex senta, C. obnupta, Eleocharis palustris, Typha augustifolia.*
		Occurrence:	Widespread, greatest extent in the Central Valley of California, elsewhere, especially along shallow lake shores as along the northeastern banks of Great Salt Lake, Klamath Marsh in Oregon
K43	**K50**	**FESCUE-WHEATGRASS (*FESTUCA-AGROPYRON*)**	
		Physiognomy:	Dense, low to medium-tall grassland
		Dominants:	Bluebunch wheatgrass (*Agropyron spicatum*) Idaho fescue (*Festuca idahoensis*)
		Other components:	*Achillea millefolium* var. *lanulosa, Artemisia tripartita, Collinsia parviflora, Hieracium albertinum, Lupinus sericeus, Potentilla blaschkeana, Rosa nutkana, R. woodsii, Symphoricarpos albus*
		Occurrence:	Eastern Washington, northwestern Idaho
K44	**K51**	**WHEATGRASS-BLUEGRASS (*AGROPYRON-POA*)**	
		Physiognomy:	Dense, low to medium-tall grassland
		Dominants:	Bluebunch wheatgrass (*Agropyron spicatum*) Idaho fescue (*Festuca idahoensis*) Sandberg bluegrass (*Poa sandbergii*)
		Other components:	*Achillea millefolium* var. *lanulosa, Astragalus* spp., *Chrysothamnus nauseosus, Draba verna, Festuca pacifica, Lithophragma bulbifera, Lupinus sericeus, Plantago purshii, Stellaris nitens*
		Occurrence:	Washington, Oregon, northwestern Idaho

K45 **K52** **ALPINE MEADOWS AND BARREN (*AGROSTIS, CAREX, FESTUCA, POA*)**

Physiognomy: Usually short grasses and sedges, dense to very open with extensive barren areas, many forbs

Dominants:
Bentgrass (*Agrostis* spp.)
Sedge (*Carex* spp.)
Hairgrass (*Deschampsia caespitosa*)
Woodrush (*Luzula spicata*)
Mountain timothy (*Phleum alpinum*)
Bluegrass (*Poa* spp.)
Spike trisetum (*Trisetum spicatum*)

Other components: *Achillea* spp., *Antennaria* spp., *Aquilegia* spp., *Arenaria* spp., *Castilleja* spp., *Draba* spp., *Erigeron compositus, lichen* spp., *Oxyria digyna, Penstemon fruticosus, Phacelia* spp., *Phlox caespitosa, Polemonium* spp., *Polygonum* spp., *Potentilla diversifolia, Potentilla* spp., *Selaginella* spp., *Sibbaldia procumbens, Sieversia trubinata, Solidago* spp.

Occurrence: Rocky Mountains, Cascade Range, Sierra Nevada, Olympic Mountains, Blue Mountains

K49 **K55** **SAGEBRUSH STEPPE (*ARTEMISIA-AGROPYRON*)**

Physiognomy: Dense to open grassland with dense to open shrub synusia

Dominants:
Bluebunch wheatgrass (*Agropyron spicatum*)
Big sagebrush (*Artemisia tridentata*)

Other components: *Artemisia arbuscula* (western part), *A. nova* (eastern part), *Balsamorhiza sagittata, Festuca idahoensis, Lithospermum ruderale, Lupinus sericeus, Oryzopsis hymenoides, Phlox* spp., *Poa nevadensis, P. secunda, Purshia tridentata, Sitanion* spp.

Occurrence: Pacific Northwest and eastward to Rocky Mountains

Appendix 5

Coding for Seral Status and Vegetation Structure (Hall and others 1995)

Three life-forms are used for coding both seral status and vegetation structure. They are as follows:

Tree: Woody species taller than 16.5 feet at maturity; a species defined as a tree in a plant community or successional publication.

Shrub: Woody species shorter than 16.5 feet at maturity; a species defined as a shrub in a plant community or successional publication.

Herb: Grasses, forbs, ferns, mosses, lichens, and other cryptogams; woody vegetation (half-shrubs) shorter than 6 inches at maturity; a species defined as an herb in a plant community or successional publication.

Coding seral status—

Coding life-form seral status—

Life-form seral status—Seral status codes have a six-digit field. The first two characters are taken from table 1 and indicate kind of PNC; the third denotes how the seral status was determined (table 2), and the 4th, 5th, and 6th characters denote seral status of tree, shrub, and herb life-forms as shown in table 3. If a life-form is not present, the letter "**X**" must be entered. Douglas-fir/ninebark/meadowrue (CDS721, appendix 7) is an example and is described as follows for current stand conditions:

Ponderosa pine (PIPO) is largest at 21 to 32 inches d.b.h. and 20 percent canopy cover; Douglas-fir (PSME) is the understory at 1 to 20 inches d.b.h. and 30 percent canopy cover; bitter cherry (PREM) dominates the shrub life-form layer at 7 feet tall and 15 percent cover; spirea (SPBE) is 18 inches tall and 25 percent cover; pinegrass (CARU) dominates the herbaceous life-form layer at 50 percent cover with meadowrue (THOC) at 20 percent cover.

Successional characteristics of this plant association have been described in detail by Steele and Geier-Hayes (1989). Stand conditions described above would be late seral tree layer, mid seral shrub layer, and PNC status herb layer. Coding would be as follows:

CD (PNC: Douglas-fir) **C** (classified study) **L** (tree) **M** (shrub) **P** (herb)

The code would be: **CDCLMP**

This code, CDCLMP, could stand alone as indicating a **coniferous forest** with PNC potential for **Douglas-fir** (D) that was **classified** from a research study as **Late** seral (L) tree status, **Mid** seral (M) shrub status, and **PNC** (P) herb status. It also could be combined with a PNC plant association code from appendix 7.

Seral status plus PNC association—Seral status coding may be attached to a code identifying a special kind of PNC: either a subseries four-character code or a plant association six-character code (appendix 7). The code CDS721 is Douglas-fir/ninebark/meadowrue as classified by Steele and others (1981). When combined with seral status, omit the PNC code preceding seral status to avoid duplication and separate the codes with a "/".

CDS721/CLMP

Use of "**C**" when attached to a PNC association code indicates that seral status is based on a successional study of the PNC represented by the code. When "**E**" is used, seral status has been estimated.

Table 1—Potential natural community (PNC) codes[a]

Code	PNC	Code	PNC
Coniferous tree species:		Forb lands:	
CA	Alpine, open, forest park	FM	Moist (mesic) forb land
CC	Western redcedar	FS	Subalpine or alpine forb land
CD	Douglas-fir	FW	Wet forb land
CE	Subalpine fir, Engelmann spruce		
CF	Silver or noble fir	Grasslands:	
CH	Western hemlock		
CJ	Western juniper	GA	Annual grasslands
CL	Lodgepole pine	GB	Bunchgrasses
CM	Mountain hemlock	GM	Mesic (forest zone) grasslands
CP	Ponderosa, Jeffery pine	GR	Rhizomastous grass-sedge
CR	Red fir	GS	Subalpine, alpine grasslands
CS	Sitka spruce		
CW	Grand or white fir	Meadows (wet) grass-sedge:	
Hardwood tree species:		MD	Dry meadow
		MM	Moist meadow
HA	Alder	MS	Subalpine or alpine
HB	Bigleaf maple	MT	Tule, standing water
HC	Cottonwood-ash bottoms	MW	Wet meadow
HL	Canyon live oak, tree size		
HO	Oak, Oregon or black	Shrublands:	
HQ	Quaking aspen		
HT	Tanoak, tree size	SC	Chaparral
		SD	Dry shrubland (sagebrush)
		SM	Mesic (forest zone) shrubland
		SS	Subalpine, alpine shrubland
		SW	Wet shrubland

[a] From appendix 7.

Table 2—Seral classification code, source, and criteria

Code	Source	Criteria
C	Classified	Seral status is classified from an investigation or research study that has characterized seral status in the PNC being evaluated.
E	Estimated	Seral status has been estimated based on the observer's best analysis of the vegetation.
A	Altered	Disturbance has changed the historical PNC resulting in a soil or vegetation threshold being crossed; an estimation of seral status may not be possible.

Table 3—Seral status code, source, and criteria

Code	Source	Criteria
P	PNC	The potential natural community under existing environment; seral species scarce to absent.
L	Late seral	PNC species are dominant, but seral species still persist.
M	Mid seral	PNC species are approaching equal proportions with seral species.
E	Early seral	Clear dominance of seral species; PNC species absent or very low in cover; absence of a life-form layer, such as absence of trees in a forest PNC.
X	None	A life-form is not present or status is not determined.
D	Depauperate	Low canopy cover in a life-form due to dense woody cover (that is, stem exclusion stage).

A four-character subseries code also may be used (appendix 7). For example, SD20 is dry shrubland life-form dominated by big sagebrush (ARTR) in PNC. When seral status is estimated as **PNC** for sagebrush and **Mid** seral for the herbaceous life-form, the code would be: **SD20/EXPM** (the **"X"** means a tree life-form is absent).

Coding an estimated seral status—Sophisticated research studies are not always available, but the need may still exist to document seral status. Tentative status of species in relation to PNC may be estimated based on observation and their autecological characteristics. For example, Minore (1979) has an excellent discussion on shade tolerance of trees and some reaction to disturbance. Many forage species have been discussed in regard to their reaction to grazing (USDA Forest Service 1937). Investigators familiar with an area have observed reaction of plant communities and species to various kinds of disturbance. Thus, a reasonable estimate of seral status by life-form layer can be made if the kind of PNC is known. Estimation of seral status is noted with an **"E"** following the code for PNC. It would be shown as follows:

CDELMP Douglas-fir PNC estimated to be in late tree, mid shrub, and PNC herb seral status.

Coding a single seral status—A single seral status may be coded by the tallest life-form layer in PNC. It follows the same format as life-form status: two-character PNC code, one-character classification source, and ends with a one-character seral status code. The Douglas-fir/ninebark/meadowrue example would be:

CDCL Douglas-fir PNC in late seral status determined by use of an investigation classifying succession.

Coding an altered PNC—When a soil or vegetation threshold has been crossed and succession to the historic PNC is no longer feasible (Hall and others 1995), use the letter **"A"** following the ecoclass code to denote an altered PNC. Many times seral status cannot be estimated because successional pathways of the new PNC are not known. When this occurs, use an **"X"** following the **"A"** to indicate unknown seral status:

CDAX Douglas-fir PNC that has been altered and seral status is unknown.

Examples of seral status—Seral status codes by both multiple and single life-form are shown in table 4 for the following examples:

PSME/PHMA/THOC: The example from "Coding life-form seral status," above.

PIPO/PUTR/CAGE: Ponderosa pine 4 to 20 inches d.b.h.; canopy cover 45 percent; bitterbrush from 4 to 30 inches tall and 30 percent cover; and elk sedge at 70 percent cover. Three conditions are coded: overgrazed to **Early** herb seral status, underburned to eliminate bitterbrush for **Early** shrub seral status, and clearcut logged for **Early** tree seral status.

JUOC/ARTR/AGSP: Western juniper 1 to 8 inches d.b.h. and 15 percent canopy cover; big sagebrush 6 to 36 inches tall at 15 percent cover; and bluebunch wheatgrass at 18 inches tall and 50 percent cover with Sandberg's bluegrass at 8 inches tall and 20 percent cover. Two conditions are coded: overgrazed to **Early** herb seral status and burned where both juniper and sagebrush are eliminated setting the tree layer and the shrub layer to **Early** seral status.

ARTR/AGSP: Big sagebrush 6 to 36 inches tall and 15 percent canopy cover; and bluebunch wheatgrass 18 inches tall and 50 percent cover with Sandberg's bluegrass at 8 inches tall and 20 percent cover. Two conditions are coded: overgrazed to **Early** herb seral status and burned where sagebrush is eliminated for **Early** shrub seral status.

AGSP/POSA3: Bluebunch wheatgrass 18 inches tall and 50 percent cover with Sandberg's bluegrass 8 inches tall and 20 percent cover. One condition is coded: overgrazed to **Early** herb seral status.

Table 4—Coding seral status for multiple life-forms and for a single life-form

PNC	Influence	Life-form codes	Single code
PSME/PHMA/THOC	Example	CDCLMP	CDCL
PIPO/PUTR/CAGE	Overgrazed	CPEPPE	CPEP
	Underburned	CPEPEP	CPEP
	Clearcut	CPEEPP	CPEE
JUOC/ARTR/AGSP	Overgrazed	CJEPPE	CJEP
	Burned	CJEEEP	CJEE
ARTR/AGSP	Overgrazed	SDEXPE	SDEP
	Burned	SDEXEP	SDEE
AGSP/POSA3	Overgrazed	GBEXXE	GBEE

Coding vegetation structure—

Tree structure—Tree structure classes are diameter, canopy cover, and strata within a tree layer, as shown in table 5.

Coding structure—Structure codes are preceded by a PNC code, as listed in table 1. Commonly, the PNC code indicates what structure is coded; i.e. forest, shrub, or herb. Exceptions are noted below.

Combining tree diameter class with cover and strata provides a means by which stand structure can be described. For example, pole-diameter trees may be coded as none (1 to 9 percent cover), open, moderate, or dense (stem exclusion) and even strata; medium-diameter trees may be coded as none (1 to 9 percent cover), open (understory reinitiation), moderate, or dense (stem exclusion) and may be even strata or unevenstrata. Some examples are:

CDLTMU Douglas-fir PNC of large-diameter trees, moderate cover, and uneven tree strata—tree structure of the PSME/PHMA/THOC example from "Coding life-form seral status," above.

CPMTMU Ponderosa pine of medium-diameter trees, moderate cover, and uneven tree strata—PIPO/PUTR/CAGE overgrazed (table 4).

CJPTOU Western juniper of pole-sized trees, open cover, and uneven tree strata—JUOC/ARTR/AGSP overgrazed (table 4).

Tree cover less than 10 percent—When **"N"** is appropriate, several options and interpretations are available. In the **shrub-herb** diameter class, **"N"** indicates less than 10 percent tree cover or no trees and **"O"** indicates 10 to 40 percent cover, both qualifying as an opening for wildlife habitat. If **"M"** or **"D"** are used, tree canopy cover is too dense to qualify as a wildlife opening (Hall and others 1985).

Other options when tree cover is less than 10 percent, where **"N"** might be used, are to code structure of the shrub or the herb life-form instead of tree life-form. Note that all tree diameter classes end **"T"** except shrub-herb (**SH**), all shrub height classes end in **"S"** (table 6), and herblands are identified by **"HE"** (table 7). Thus, a forest PNC **without** trees can be coded for shrub or herb structure instead of using a forest structure code. Coding and interpretation are as follows:

CDLTMU Douglas-fir PNC of large-diameter trees, moderate cover, uneven strata; the PSME/PHMA/THOC example from "Coding life-form seral status."

CDSHNN Douglas-fir PNC in shrub-herb diameter class, no trees (less than 10 percent cover) and no strata; the PSME/PHMA/THOC example after clearcut logging.

CDTSMU The same Douglas-fir PNC described above (clearcut) but using the shrub life-form structure of tall shrubs, moderate shrub cover, uneven shrub strata; no tree structure code means less than 10 percent tree cover.[1]

[1] Please note that a forest PNC followed by a shrub or herb structure means less than 10 percent tree cover; if the herb layer is shown, both tree and shrub cover are less than 10 percent each.

Table 5—Tree structure codes

Code	Class	Characteristics
Tree diameter classes[a]		
SH	Shrub-herb	Trees, if present, less than 1 inch d.b.h.; area may be dominated by grasses, herbs, shrubs or bare ground; trees may dominate but are less than 1 inch d.b.h.
ST	Sapling trees	Trees from 1 to 4.9 inches d.b.h. (20 TPA[a])
PT	Pole trees	Trees from 5 to 8.9 inches d.b.h. (15 TPA)
MT	Medium trees	Trees from 9 to 20.9 inches d.b.h. (10 TPA)
LT	Large trees	Trees from 21 to 31.9 inches d.b.h. (10 TPA)
GT	Giant trees	Trees from 32 to 47.9 inches d.b.h. (5 TPA)
RT	Remnant trees	Trees larger than 48 inches d.b.h. (5 TPA)
Tree canopy cover classes[b]		
N	None	Less than 10 percent canopy cover
O	Open	From 10 to 40 percent canopy cover
M	Moderate	From 40 to 69 percent canopy cover
D	Dense	Over 70 percent canopy cover
Tree strata classes		
N	None	No tree life-form
E	Even strata	A single tree strata; less than 30 percent difference in size of trees
U	Uneven strata	Two or more tree strata; more than 30 percent difference in height between trees. To qualify as a strata, canopy cover in the strata must exceed 10 percent, except for regeneration less than 1 inch d.b.h. where at least 100 established trees per acre (22 feet between trees) qualifies as a strata.

[a] Applies to the largest trees or tree species. A class is determined by the average d.b.h. of the number of trees per acre (TPA) shown.
[b] Applies to all tree strata added together.

CDHEDU A different Douglas-fir PNC stand with no tree or shrub layers but rated as dense cover and uneven strata of herbs (see footnote 1).

CPMSOE Ponderosa pine PNC without a tree layer, medium-tall shrubs of open cover and even shrub strata; the PIPO/PUTR/CAGE example from "Examples of seral status" clearcut (table 4).

CJHEMU Western juniper without tree or shrub layers, herbaceous layer at moderate cover and uneven strata; the JUOC/ARTR/AGSP example form "Examples of seral status" burned (table 4) (see footnote 1).

Shrub structure—Structure for shrublands is characterized by four shrub heights, four canopy covers, and two strata (table 6).

Table 6—Shrub structure codes

Code	Class	Characteristics
Shrub height classes[a]		
NS	No shrubs	Less than 10 percent canopy cover
LS	Low shrubs	Shrubs less than 1.7 feet tall (20 inches)
MS	Medium shrubs	Shrubs 1.7 to 6.5 feet tall
TS	Tall shrubs	Shrubs 6.5 to 16.5 feet tall
Shrub cover classes[b]		
N	None:	Less than 10 percent canopy cover
O	Open:	From 10 to 25 percent canopy cover
M	Moderate:	From 26 to 66 percent canopy cover
D	Dense:	Over 67 percent canopy cover
Shrub strata classes		
N	None	No shrub strata
E	Even strata	One shrub stratum; less than 30 percent difference in height
U	Uneven strata	Two or more shrub strata, which may be made up of different heights; greater than 30 percent difference in height. A second shrub strata must have at least 25 percent of the total canopy cover.

[a] Height class is determined by the average height of the 20 tallest shrubs per acre (45-foot spacing).
[b] Canopy cover applies to all shrubs added together.

Coding shrub structure—Structure codes are preceded by a two-character PNC code taken from table 1. This is followed by a two-character height code and single codes for cover and strata. If the shrub life-form is absent (less than 10 percent cover), structure of the herbaceous layer may be used.

SDMSOE Dry shrubland PNC of medium-tall shrubs, open shrub cover and even strata; the ARTR/AGSP example prior to overgrazing or burning from "Examples of seral status."

SDNSNN Dry shrubland PNC with no shrub layer that has no shrub cover and no shrub strata; the ARTR/AGSP example after fire (table 4).

SDHEDU Dry shrubland PNC without a shrub layer but with a herbaceous layer at dense cover and uneven strata; the ARTR/AGSP example after fire (table 4).

CDTSMU Douglas-fir PNC without a tree layer but with tall shrubs of moderate cover and uneven strata; the PSME/PHMA/THOC example clearcut.

Herb structure—Herblands are composed of only one life-form but do have canopy cover and strata characteristics. Coding is shown in table 7.

Table 7—Herb structure codes

Code	Class	Characteristics
	Herbland life-form	
HE	Herbland	The only life-form present
	Cover of herbs for all species, including cryptogams	
N	None	Less than 10 percent canopy cover
O	Open	From 10 to 25 percent canopy cover
M	Moderate	From 26 to 66 percent canopy cover
D	Dense	Greater than 67 percent canopy cover
	Strata of herblands, including cryptogams	
N	None	No herb life-form (bare ground)
E	Even strata	One strata of herbs; less than 30 percent difference in height; cryptogams must be less than 10 percent cover
U	Uneven strata	Two or more herb strata, greater than 30 percent difference in height; cryptogams at 10 percent or greater cover constitute a strata; canopy cover in a strata must exceed 10 percent.

Coding structure summary—Structure of a life-form layer is coded as six characters: PNC as two characters from table 1, size as two characters, cover as one, and strata as one character. The Douglas-fir/ninebark/meadowrue example may be coded as follows:

Tree layer:	**CDLTMU** =	Douglas-fir PNC of large-diameter trees, moderate tree cover, uneven tree strata.
Shrub layer:	**TSMU** =	Tall shrubs, moderate shrub cover, uneven shrub strata.
Herb layer:	**HEDU** =	Herb layer, dense herb cover, uneven herb strata.

If all life-forms are to be coded, begin with a PNC code of the tallest and proceed to the shortest: PNC, tree, shrub, herb. Use PNC only at the beginning. The codes above would be:

CDLTMU-TSMU-HEDU

which reads as follows: Douglas-fir PNC currently in large-diameter trees of moderate cover and uneven tree strata, tall shrubs of moderate cover and uneven strata, and herbaceous layer that is dense in cover and uneven strata.

Note the difference between the coding above and the following coding for a PNC where a layer is missing; i.e., less than 10 percent cover:

Tree layer:	**CDLTMU** =	Douglas-fir PNC of large-diameter trees, moderate tree cover, uneven tree strata; the PSME/PHMA/THOC.

Table 8—Structure of plant communities[a]

PNC	Condition	Code
PSME/PHM/THOC	(example[b])	CDLTMU-TSMU-HEDU
PIPO/PUTR/CAGE	Overgrazed	CPMTMU-MSMU-HEOE
	Underburned	CPMTMU-NSNN-HEDE
	Herb structure[c]	CPMTMU-HEDE
	Clearcut	CPSHNN-MSMU-HEDE
	Shrub structure[d]	CPMSMU-HEDE
JUOC/ARTR/AGSP	Overgrazed	CJPTOU-MSOU-HEOE
	Burned	CJSHNN-NSNN-HEMU
	Herb structure[e]	CJHEMU
ARTR/AGSP	Overgrazed	SDMSOU-HEOE
	Burned	SDNSNN-HEMU
	Herb structure[f]	SDHEMU
AGSP/POSA3	Overgrazed	GBHEOE

[a] Discussed in "Examples of seral status" and shown in table 4.
[b] The example illustrated in "Coding life-form seral status."
[c] Underburned with no shrub structure; omit shrub layer and use herb layer.
[d] Clearcut with no tree structure; omit tree layer and use shrub and herb layers.
[e] Burned with no tree or shrub structure; use only the herb layer.
[f] Burned with no shrub structure; use only the herb layer.

Shrub layer: **CDTSMU** = Douglas-fir PNC with **less than 10 percent** tree cover, tall shrub layer of moderate shrub cover, uneven shrub strata; the PSME/PHMA/THOC logged.

Herb layer: **CDHEDU** = Douglas-fir PNC with **less than 10 percent** tree cover and **less than 10 percent** shrub cover with a herb layer, dense herb cover, uneven herb strata; the PSME/PHMA/THOC with no tree or shrub layers.

Codes are shown in table 8 for PNCs discussed above in "Examples of seral status" and shown in table 4 for seral status.

Combining seral status and vegetation structure—Combining seral status with structure means combining most of the coding. The order would be PNC, source, seral status of tree, shrub, and herb life-forms/size, cover, strata. The PNC code preceding structural codes is dropped when combining with seral status to avoid duplication. Using the Douglas-fir/ninebark/meadowrue example, stand condition would be Douglas-fir PNC, classification study source, late seral tree, mid seral shrub, PNC herb status/large-diameter trees, moderate cover, unevenstrata. Coding would be:

CDCLMP/LTUM

Table 9—Seral status and vegetation structure

PNC	Condition	Seral status/structure
PSME/PHMA/THOC	(example[a])	CDCLMP/LTMU-TSMU-HEDU
PIPO/PUTR/CAGE	Overgrazed	CPEPPE/MTMU-MSMU-HEOE
	Underburned	CPEPEP/MTMU-NSNN-HEDE
	Herb structure[b]	CPEPEP/MTMU-HEDE
	Clearcut	CPEEPP/SHNN-MSMU-HEDE
	Shrub structure[c]	CPEEPP/MSMU-HEDE
JUOC/ARTR/AGSP	Overgrazed	CJEPPE/PTOU-MSOU-HEOE
	Burned	CJEEEP/SHNN-NSNN-HEMU
	Herb structure[d]	CJEEEP/HEMU
ARTR/AGSP	Overgrazed	SDEXPE/MSOU-HEOE
	Burned	SDEXEP/NSNN-HEMU
	Herb structure[e]	SDEXEP/HEMU
AGSP/POSA3	Overgrazed	GBEXXE/HEOE

[a] Example from "Coding life-form seral status."
[b] Underburned with no shrub structure; omit shrub layer and use herb layer.
[c] Clearcut with no tree structure; omit tree layer and use shrub and herb layers.
[d] Burned with no tree or shrub structure; use only the herb layer.
[e] Burned with no shrub structure; use only the herb layer.

A complete stand condition description would add shrub and herb structure as follows:

CDCLMP/LTMU-TSMU-HEDU

This would read as Douglas-fir PNC evaluated by a classification study for late seral tree, mid seral shrub, and PNC herb layers; currently in large-diameter trees of moderate cover with uneven tree strata; tall shrubs of moderate cover in uneven shrub strata; and an herbaceous layer that is dense in cover and uneven strata.

Codes are as follows (table 9) for the PNCs previously illustrated in tables 4 and 8:

Combining PNC association, seral status, and vegetation structure—list the PNC association code first, separate from seral status by a "/," separate seral status from vegetation structure by another "/," then list the structure codes by tree-shrub-herb layers. The Douglas-fir/ninebark/meadowrue example would be:

CDS721/CLMP/LTMU-TSMU-HEDU

SPECIES ACRONYMS

AGSP	*Agropyron spicatum* Pursh	Bluebunch wheatgrass
ARTR	*Artemesia tridentata* Nutt.	Big sagebrush
CAGE	*Carex geyerii* Boott	Elk sedge

CARU	*Calamagrostis rubescens* Buckl.	Pinegrass
JUOC	*Juniperus occidentalis* Hook.	Western juniper
PHMA	*Physocarpus malvaceus* (Green) Kuntze	Ninebark
PIPO	*Pinus ponderosa* P&C Lawson	Ponderosa pine
POSA3	*Poa sandbergi* Vasey	Sandberg's bluegrass
PREM	*Prunus emarginata* (Dougl. ex Hook.) Walp.	Bitter cherry
PUTR	*Purshia tridentata* (Push) DC	Bitterbrush
SPBE	*Spirea betulifolia* Palla	Birchleaf spirea
THOC	*Thalictrum occidentale Gray*	Western meadowrue

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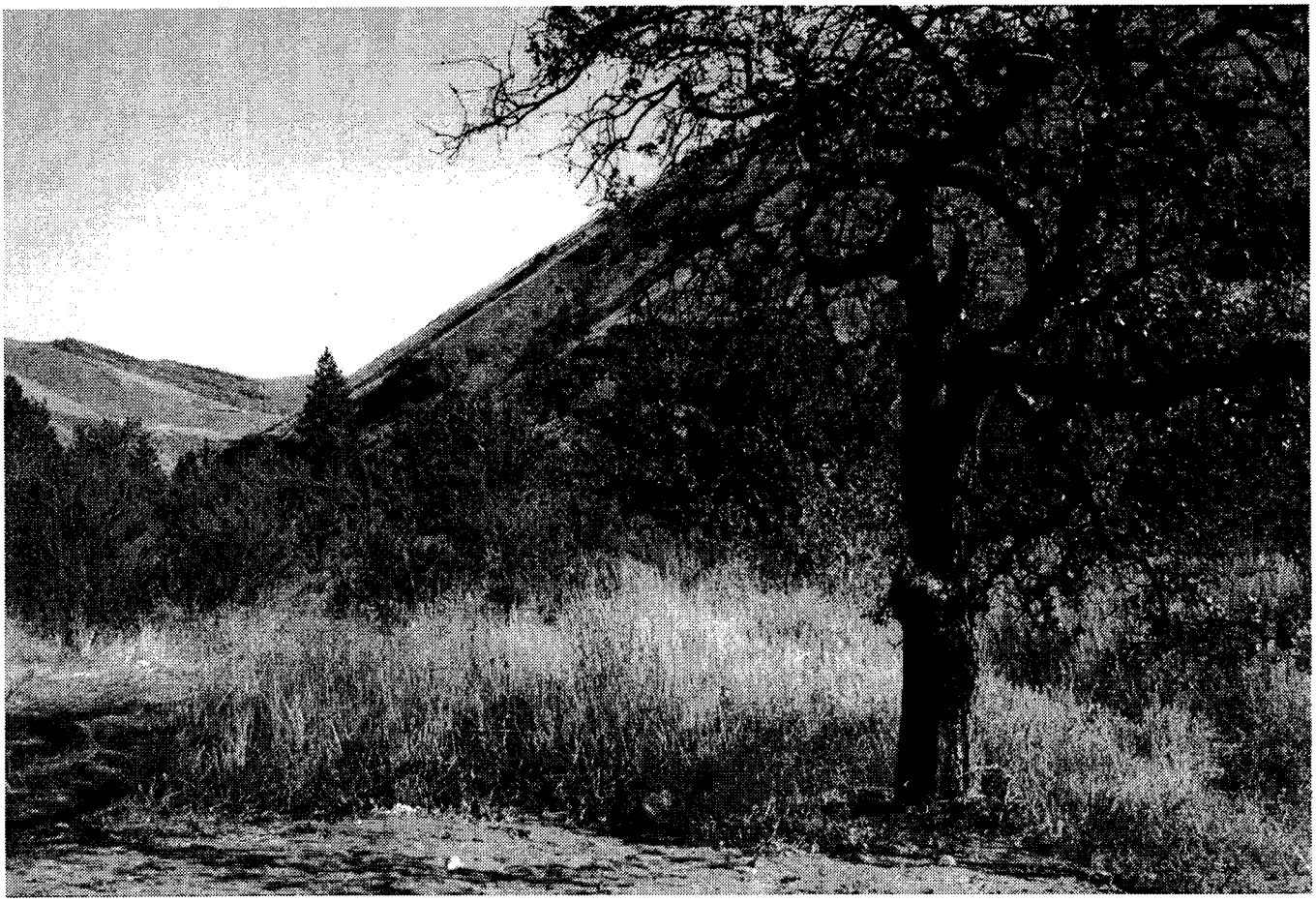
Appendix 6

Synonyms of Ecoclass Species Codes With Those in the PLANTS Listing for Oregon and Washington



Discussion—Several problems were discovered while constructing a synonym list between plant species codes naming plant associations listed in ecoclass and species codes listed in the Natural Resources Conservation Services PLANTS list of 29 March 1994 (PLANTS of Oregon, Alphabetical Listing and PLANTS of Washington, Alphabetical Listing). The following procedure and findings reflect work with 290 species.[1]

The following procedure was effective in developing the synonym list:

1. Check ecoclass codes against PLANTS codes and list the nonmatching codes. (PLANTS lists genus and species alphabetically.) Of 290 species, 180 (62 percent) did not have matching codes.
2. Look up matching codes and verify that they indicate the same species. In 40 cases, the code in ecoclass indicated a species different from PLANTS.
3. Look up nonmatching ecoclass codes in the Region 6 species code list dated March 13, 1990 (codes are alphabetical).
4. Determine genus and species for the ecoclass code.
5. Look up the genus and species in PLANTS.
   a Check whether the genus and species are accepted or a synonym: accepted shows the common name in the third column; synonym shows an "=" and the accepted genus and species.
   b. If the genus and species are accepted, use the PLANTS code as the synonym for the ecoclass code.
   c. If the genus and species are a synonym, look up the synonym genus and species and record the PLANTS code as the synonym for ecoclass.
6. A five-column system was used as follows:

Ecoclass			PLANTS	
Code	Scientific name	Common name	New code	Genus and species
SIHY	*Sitanion hystrix*	Bottlebrush squirreltail	ELEL5	*Elymus elymoides* (Rat.) Swezey

7. Using the form shown in no. 6 above, check to see if the new PLANTS code was listed in ecoclass of March 13, 1990. If it was (please see no. 6 below), then do another genus and species synonym routine as described above. This situation occurred 40 times with 290 species.

The following situations were found:

1. Transpositions were found in ecoclass codes, such as JUOC4 instead of JUCO4. Knowledge of the plant association was required to correct the code or check the reference in ecoclass.

[1] This synonym list was prepared by the author and Virginia L. Hokkanen of the Natural Resources Unit, USDA Forest Service, Pacific Northwest Region, Portland, OR 97208.

2. Genus-only codes, used in some ecoclass names, could not be correlated with PLANTS codes because genus and species are always used in PLANTS. For example, SENES, BROMUS, SALIX.

3. Site identification codes in ecoclass could not be correlated with PLANTS codes; for example, RHYO, OLY, and WEN.

4. The PLANTS state book must be used for ecoclass associations located in a state; for example, CADE3 is not found in Washington, and LALY and VAMY are not found in Oregon.

5. We found no way to cross-walk change in number for the same alpha code between ecoclass and PLANTS; for example, SCMI to SCMI2 or CADE3 to CADE27. We had to use the procedure described above of tracing genus and species.

6. We found that PLANTS lists codes that are the same in the ecoclass list of March 13, 1990, but are different species. For example, ecoclass code STOC is *Stipa occidentalis*, which is STOC2 in PLANTS; however, ecoclass also lists STOC2 but as *Stenanthium occidentale*, which is STOC in PLANTS. This situation—PLANTS codes listed in ecoclass but of a different species—occurred 40 times with 290 species or 14 percent of the time.

7. Of the 180 codes that were different between ecoclass and PLANTS:

   100 had the same species but different codes (33 percent of 290 species).

   56 had different species and thus different codes (18 percent of 290 species).

   40 fell into the discussion in no. 6 above (14 percent of 290 species).

Sort 1: Ecoclass Code

The following list is alphabetical by ecoclass code (first column).

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ABLA2	*Abies lasiocarpa* A. Murray bis	Subalpine fir	ABBI2	*Abies bifolia* A. Murray bis only for the Blue and Wallowa Mountains and the Colville NF
ABMAS	*Abies magnifica* var. *shastensis* Lemmon	Shasta red fir	ABSH	*Abies X shastensis* (Lemmon) Lemmon
ACGLD	*Acer glabrum douglasii*	Douglas maple	ACGLD4	*Acer glabrum* var. *douglasii* (Hook.) Dippel
AGCR	*Agropyron cristatum*	Desert wheatgrass	AGDE2	*Agropyron desertorum* (Fisch. ex Linlc.) J.A. Schultes
AGIN	*Agropyron inermis*	Beardless wheatgrass	PSSPI	*Pseudoroegneria spicata* ssp. *inermis* (Scribr. & J.G. Sm.) A. Love
AGSP	*Agropyron spicatum* Pursh	Bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata* (Pursh) A. Love
ALIN	*Alnus incana*	Mountain alder	ALIN2	*Alnus incana* (L.) Moench
ALPA2	*Allium parvum*	Small onion	ALPA3	*Allium parvum* Kellogg
ALRH	*Alnus rhombifolia*	White alder	ALRH2	*Alnus rhombifolia* Nutt.
ALSI	*Alnus sinuata*	Sitka alder	ALVIS	*Alnus viridis* ssp. *sinuate* (Regel) A.& D. Love
ALTE	*Alnus tenuifolia*	Thinleaf alder	ALINT	*Alnus incana* ssp. *tenuifolia*
AMAL	*Amelanchier alnifolia*	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roemer
AMAL2	*Amaranthus albus*	Prostrate pigweed	AMAL	*Amaranthus albus* L.
ARAR	*Artemisia arbuscula*	Low sagebrush	ARAR8	*Artemisia arbuscula* Nutt.
ARCA	*Artemisia cana*	Silver sage	ARCA13	*Artemisia cana* Pursh
ARCO	*Arnica cordifolia*	Heartleaf arnica	ARCO9	*Arnica cordifolia* Hook.
ARCO2	*Arenaria congesta*	Ballhead sandwort	ARCO5	*Arenaria congesta* Nutt.
ARLA	*Arnica latifolia*	Broadleaf arnica	ARLA8	*Arnica latifolia* Bong.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARLO	*Arnica longifolia*	Spearleaf arnica	ARLO6	*Arnica longifolia* D.C. Eat.
ARLO3	*Aristida longiseta* Steud.	Fendler threeawn	ARPUL	*Aristida purpurea* var. *longiseta* (Steud.) Vasey
ARNO	*Artemisia nova*	Alkali sagebrush	ARARL	*Artemisia arbuscula* ssp. *longiloba* (Osterhout) L. Shultz
ARNU	*Arenaria nuttalli*	Nuttall's sandwort	MINUN2	*Minuartia nuttallii* ssp. *nuttallii* (Pax.) Briq.
ARNU2	*Arabis nuttalli*	Nuttall's rockcress	ARNU	*Arabis nuttallii* B.L. Robins
ARNU3	*Aralia nudicaulis*	Wild sarsaparilla	ARNU2	*Aralia nudicaulis* L.
ARPA	*Arctostaphylos patula*	Greenleaf manzanita	ARPA6	*Arctostaphylos patula* Greene
ARPA5	*Artemisia papposa*	Fuzzy sagebrush	ARPA16	*Artemisia papposa* Blake & Cronq.
ARPA6	*Arctostaphylos parviflora*	Gravel manzanita	ARPA5	*Arctostaphylos X parviflora* T.J. Hoew (Pro. sp.)
ARRI	*Artemisia rigida*	Stiff sagebrush	ARRI2	*Artemisia rigida* (Nutt.) Gray
ARTH2	*Arabis thaliana* L.	Mouseear cress	ARTH	*Arabidopsis thaliana* (L.) Heynh.
ARTR	*Artemisia tridentata*	Big sagebrush	ARTR2	*Artemisia tridentata* Nutt.
ARTR2	*Artemisia tripartita*	Threetip sagebrush	ARTR4	*Artemisia tripartita* Rydb.
ARTRS	*Artemisia tridentata spiciformis*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARTRVX	*Artemisia tridentata vaseyana*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARTRW	*Artemisia tridentata wyomingensis*	Basin big sagebrush	ARTRT	*Artemisia tridentata* ssp. *tridentata* Nutt.
ARVI	*Arctostaphylos viscida*	Sticky whiteleaf manzanita	ARVI4	*Arctostaphylos viscida* Parry
ASCA2	*Aster campestris*	Meadow aster	ASCA6	*Aster campestris* Nutt.
ASCA3	*Asarum caudatum*	British Columbia wildginger	ASCA2	*Asarum caudatum* Lindl.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ASCU4	*Astragalus cusickii*	Cusick's milkvetch	ASCU5	*Astragalus cusickii* Gray
ASDE	*Aspidotis densa*	Indian's dream	ASDE6	*Aspidotis densa* (Brack.) Lellinger
ASLE	*Astragalus lentiginosus*	Specklepod milkvetch	ASLE8	*Astragalus lentiginosus* Dougl. ex Hook.
ASLE2	*Aster ledophyllus*	Cascade aster	ASLE3	*Aster ledophyllus* (Gray) Gray
ASLE3	*Astragalus leibergii*	Leiberg's milkvetch	ASLE5	*Astragalus leibergii* M.E. Jones
ASLE5	*Aster leiodes*	Cutleaf goldenweed	MACAC3	*Machaeranthera canescens* ssp. *canescens* var. *canescens* (Pursh) Gray
ASMO	*Aster modestus*	Modest aster	ASMO3	*Aster modestus* Lindl.
BASA	*Balsamorhiza sagittata*	Arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata* (Pursh) Nutt.
BEAQ	*Berberis aquifolium* Pursh	Hollyleaved barberry	MAAQ2	*Mahonia aquifolium* (Pursh) Nutt.
BENE	*Berberis nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
BERE	*Berberis repens* Lindl.	Oregongrape	MARE11	*Mahonia repens* (Lindl.) G. Don
BRCA	*Bromus carinatus*	California brome	BRCA5	*Bromus carinatus* Hook. & Arn.
BROMUS	*Bromus* spp.	Bromegrass		
CAAM	*Carex amplifolia*	Bigleaf sedge	CAAM10	*Carex amplifolia* Boott
CABI	*Caltha biflora*	Howell's marshmarigold	CALEH2	*Caltha leptosepala* ssp. *Howellii* (Huth) P.G. Sm.
CABR	*Carex breweri*	Brewer's sedge	CABR12	*Carex breweri* Boott
CACA	*Calamagrostis canadensis*	Bluejoint	CACA4	*Calamagrostis canadensis* (Michx.) Beauv.
CACA4	*Carex canescens*	Silvery sedge	CACA11	*Carex canescens* L.
CACH	*Castanopsis chrysophylla*	Golden chinkapin	CACH6	*Castanopsis chrysophylla* (Dougl. ex Hook.) A. DC.
CACU	*Camassia cusickii*	Cusick's camas	CACU2	*Camassia cusickii* S. Wats

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CACU2	*Carex cusickii*	Cusick's sedge	CACU5	*Carex cusickii* Mackenzie ex Piper & Beattie
CADE	*Carex deweyana*	Taperfruit shortscale sedge	CALE24	*Carex leptopoda* Mackenzie
CADE	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADE3	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADI	*Carex disperma*	Softleaf sedge	CADI6	*Carex disperma* Dewey
CAEU	*Carex eurycarpa*	Widefruit sedge	CAAN15	*Carex angustata* Boott
CAGE	*Carex geyeri*	Elk sedge	CAGE2	*Carex geyeri* Boott
CAHO	*Carex hoodii*	Hood's sedge	CAHO5	*Carex hoodii* Boott
CAIN3	*Carex interrupta*	Greenfruit sedge	CAIN17	*Carex interrupta* Boeckl.
CALA3	*Carex lanuginosa*	Knotroot reedgrass	CALA3	*Calamagrostis laxtea* Beal
CALA3	*Carex lanuginosa*	Woolly sedge	CALA30	*Carex lanuginosa* Michx.
CALA4	*Carex lasiocarpa*	Woollyfruit sedge	CALA11	*Carex lasiocarpa* Ehrh.
CALE5	*Carex lenticularis*	Tufted sedge	CALE8	*Carex lenticularis* Michx.
CALE8	*Carex leptalea*	Bristly stalked sedge	CALE10	*Carex leptalea* Wahlenb.
CAME	*Cassiope mertensiana*	Western moss heather	CAME7	*Cassiope mertensiana* (Bong.) D. Don
CANE	*Calamagrostis neglecta*	Slimstem reedgrass	CASTS5	*Calamagrostis stricta* ssp. *stricta* var. *stricta* (Timm) Koel.
CANO	*Carex nova*	Black sedge	CANO3	*Carex nova* Bailey
CANU4	*Carex nudata*	Naked sedge	CANU5	*Carex nudata* W. Boott
CANU5	*Carduus nutans*	Nodding plumeless thistle	CANU4	*Carduus nutans* L.
CAPE	*Carex pennsylvanica*	Longstolen sedge	CAIN9	*Carex inops* Bailey

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CAREX	*Carex* spp.	Sedges		
CARO	*Carex rossii*	Ross' sedge	CARO5	*Carex rossii* Boott
CARO2	*Carex rostrata*	Beaked sedge	CARO6	*Carex rostrata* Stokes
CASC	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CASC5	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CASI3	*Carex sitchensis* Prescott ex Bong.	Sitka sedge	CAAQD	*Carex aquatilis* var. *dives* (Holm) Kukenth.
CAVE	*Carex vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CAVEV	*Carex vesicaria* var. *vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CELE	*Cercocarpus ledifolius*	Curlleaf mountain-mahogany	CELE3	*Cercocarpus ledifolius* Nutt.
CERE2	*Celtis reticulata* Torr.	Netleaf hackberry	CELAR	*Celtis laevigata* var. *reticulata* (Torr.) L. Benson
CHVI	*Chrysothamnus viscidiflorus*	Green rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus* (Hook.) Nutt.
CLPY	*Cladothamnus pyroliflorus*	Copperbrush	ELPY	*Elliottia pyroliflorus* (Bong.) S.W. Brim & P.F. Stevens
CLUN	*Clintonia uniflora*	Bride's bonnet	CLUN2	*Clintonia uniflora* (Menzies ex J.A. & J.H. Schultes) Kunth
COCA	*Cornus canadensis*	Bunchberry dogwood	COCA13	*Cornus canadensis* L.
COCO	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
COCO2	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
CONU	*Cornus nuttallii*	Pacific dogwood	CONU4	*Cornus nuttallii* Audubon ex Torr. & Gray
COOC	*Cornus occidentalis*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
COOC2	*Coptis occidentalis*	Oregon goldthread	COLA3	*Coptis laciniata* Gray

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
COST	*Cornus stolonitera*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
CRDO	*Crataegus douglasii*	Black hawthorn	CRDO2	*Crataegus douglasii* Lindl.
DIHO	*Disporum hookeri*	Drops of gold	DIHO3	*Disporum hookeri* (Torr.) Nichols.
DIST	*Distichlis stricta*	Inland saltgrass	DISP	*Distichlis spicata* (L.) Greene
ELCI	*Elymus cinereus*	Basin wildrye	LECI4	*Leymus cinereus* (Scribn. & Merr.) A. Love
ELPA	*Eleocharis palustris*	Common spikerush	ELPA3	*Eleocharis palustris* (L.) Roemer & J.A. Schultes
ELPA2	*Eleocharis pauciflora*	Fewflower spikerush	ELQU2	*Eleocharis quinqueflora* (F.X. Hartmann) Schwartz
ELPA3	*Eleocharis parvula*	Dwarf spikerush	ELPA5	*Eleocharis parvula* (Roemer & J.A. Shucltes) Link ex Bluff, Nees & Schauer
ERCO	*Erigeron compositus*	Cutleaf daisy	ERCO4	*Erigeron compositus* Pursh
ERCO4	*Erigeron coulteri*	Large mountain fleabane	ERCO6	*Erigeron coulteri* Porter
ERHE	*Eriogonum heracleoides*	Parsnipflower buckwheat	ERHE2	*Eriogonum heracleoides* Nutt.
ERHE2	*Erythronium hendersonii*	Henderson's fawnlily	ERHE7	*Erythromium hendersonii* S. Wats.
ERLA	*Eriophyllum lanatum*	Woolly eriophyllum	ERLA6	*Eriophyllum lanatum* (Pursh) Forbes
ERMO	*Erythronium montanum*	White avalanchelily	ERMO8	*Erythronium montanum* S. Wats.
ERNI	*Eriogonum niveum*	Snow buckwheat	ERNI2	*Eriogonum niveum* Dougl. ex Benth.
ERPE	*Erigeron peregrinus*	Subalpine fleabane	ERPE3	*Erigeron peregrinus* (Banks ex Pursh) Greene
ERPE3	*Eragrostis pectinacea*	Tufted lovegrass	ERPE	*Eragrostis pectinacea* (Michx.) Nees ex Steud.
ERPU	*Erigeron pumilus*	Shaggy fleabane	ERPU2	*Erigeron pumilus* Nutt.
ERSP	*Erigeron speciosus*	Aspen fleabane	ERSP4	*Erigeron speciosus* (Lindl.) D.C.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ERSP3	*Erigonum sphaerocephalum*	Rock buckwheat	ERSP7	*Eriogonum sphaerocephalum* Dougl. ex Benth.
ERSP4	*Eriastrum sparsiflorum*	Great Basin woolstar	ERSP3	*Eriastrum sparsiflorum* (Eastw.) Mason
ERST2	*Eriogonum strictum*	Blue Mountain buckwheat	ERST4	*Eriogonum strictum* Benth.
ERTH	*Eriogonum thymoides*	Thymeleaf buckwheat	ERTH4	*Eriogonum thymoides* Benth.
EULA	*Eurotia lanata*	Winterfat	KRLA2	*Krascheninnikovia lanata* (Pursh) Guldenstaedt
FERU	*Festuca rubra*	Red fescue	FERU2	*Festuca rubra* L.
GATR	*Galium triflorum*	Fragrant bedstraw	GATR3	*Galium triflorum* Michx.
GATR2	*Galium tricornatum*	Roughfruit corn bedstraw	GATR6	*Galium tricornutum* Dandy
GATR3	*Galium trifidum*	Threepetal bedstraw	GATR2	*Galium trifidum* L.
GLNE	*Glossopetalon nevadense*	Spiny greasebush	GLSPA	*Glossopetalon spinescens* var. *Adrdum* M.E. Jones
GYDR	*Gymnocarpium dryopteris*	Pacific oakfern	GYDI2	*Gymnocarpium disjunctum* (Rupr.) Sarvela
HAST	*Haplopappus stenophyllus* Gray	Narrowleaf goldenweed	STST5	*Stenotus stenophyllus* (Gray) Greene
HELA	*Heracleum lanatum*	Common cowparsnip	HEMA80	*Heracleum maximum* Bartr.
HELA	*Heracleum lanatum*	Mountain sunflower	HELA	*Helianthus X laetifloris* Pers. (Pro sp.)
HODU	*Holodiscus dumosus*	Oceanspray	HODI	*Holodiscus discolor* (Pursh) Maxim.
HULSEA	*Hulsea* spp.	Hulsea		
JUBA2	*Juncus balticus*	Baltic rush	JUBA	*Juncus balticus* Willd. (Suksdorf) C.L. Hitchc.
JUCO	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
JUCO4	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
KOCR	*Koeleria cristata*	Prairie Junegrass	KOMA	*Koeleria macrantha* (Leded.) J.A. Schultes
LALA2	*Lathyrus lanszwertii*	Thickleaf peavine	LALA3	*Lathyrus lanszwertii* Kellogg
LALA3	*Lathyrus latifolius*	Perennial peavine	LALA4	*Lathyrus latifolius* L.
LIBO	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO	*Listera borealis*	Northern tway blade	LIBO4	*Listera borealis* Marong.
LIBO2	*Linnaea borealis*	Bolander's deserttrumpets	LIBO2	*Linanthus bolanderi* (Gray) Greene
LIBO2	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO3	*Lilium bolanderi*	Bolander's lily	LIBO	*Lilium bolanderi* S. Wats
LINU	*Linanthastrum nuttallii*	Nuttall's deserttrumpets	LINUN	*Linanthus nuttallii* ssp. *nuttalli* (Gray) Greene ex Milliken
LOM	*Lomatium* spp.	Biscuitroot		
LOMA	*Lomatium macrocarpum*	Bigseed biscuitroot	LOMA3	*Lomatium macrocarpum* (Nutt. ex Torr. & Gray) Coult. & Rose
LOMA	*Lomatium macrocarpum*	Seaside lobularia	LOMA	*Lobularia maritima* (L.) Desv.
LUHI	*Luzula hitchcockii*	Hitchcock's smooth woodrush	LUGLH	*Luzula glabrata* var. *hitchcockii* (Hamet-Ahti) Dorn
LULA	*Lupinus latifolius*	Broadleaf lupine	LULA4	*Lupinus latifolius* Lindl. ex J.G. Agardh
LULA2	*Lupinus laxiflorus*	Spur lupine	LUARL5	*Lipinus argenteus* ssp. *argenteus* var. *laxiflorus* (Dougl. ex Lindl.) Dorn
LUP	*Lupinus* spp.	Lupines		
LUPI	*Lupinus* spp.	Lupines		
LUSE	*Lupinus sericeus*	Silky lupine	LUSE4	*Lupinus sericeus* Pursh
LUSE	*Lupinus sericeus*	Creeping silverback	LUSE	*Luina serpentina* Cronq.

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Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
LUZULA	*Luzula* spp.	Woodrush		
LYAM	*Lysichitum americanus*	American skunkcabbage	LYAM3	*Lysichiton americanus* Hulten & St. John
LYAM	*Lysichitum americanus*	American waterhorehound	LYAM	*Lycopus americanus* Muhl. ex W. Bart.
MADI	*Madia dissitiflora*	Grassy tarweed	MAGR3	*Madia gracilis* (Sm.) Keck & J. Clausen ex Applegate
MADI2	*Maianthemum dilatatum*	Twoleaf false Solomon's seal	MADI	*Maianthemum dilatatum* (Wood) A. Nels. & J.F. Macbr.
MANE	*Mahonia nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
MANE2	*Malva neglecta*	Common mallow	MANE	*Malva neglecta* Wallr.
MOSI	*Montia sibirica*	Siberian springbeauty	CLSIS	*Claytonia sibirica* var. *sibirica*
OSCH	*Osmorhiza chilensis*	Sweetcicely	OSBE	*Osmorhiza berteroi* DC.
OXALIS	*Oxalis* spp.	Oxalis		
PAMY	*Pachistima myrsinites*	Boxleaf myrtle	PAMY	*Paxistima myrsinites* (Pursh) Raf.
PEFR2	*Petasites frigidus*	Arctic sweet coltsfoot	PEFR5	*Petasites frigidus* (L.) Fries
PELA	*Penstemon laetus*	Mountain blue penstemon	PELA7	*Penstemon laetus* Gray
PENST	*Penstemon* spp.	Penstemon		
PERA3	*Peraphyllum ramosissimum*	Squaw apple	PERA4	*Peraphyllum ramosissimum* Nutt.
PERA3	*Peraphyllum ramosissimum*	Rattan's beardtongue	PERA3	*Penstemon rattanii* Gray
PHCA3	*Physocarpus capitatus*	Pacific ninebark	PHCA11	*Physocarpus capitatus* (Pursh) Kuntze
PHCO2	*Phlox colubrina*	Snake River phlox	PHCO10	*Phlox colubrina* Wherry & Constance
PHHE	*Phacelia heterophylla*	Varileaf phacelia	PHHE2	*Phacelia heterophylla* Pursh
PHHE2	*Phlox hendersonii*	Henderson's phlox	PHHE9	*Phlox hendersonii* (E. Nels.) Cronq.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
PHLE2	*Philadelphus lewisii*	Lewis' mockorange	PHLE4	*Phildelphus lewisii* Pursh
PHMA	*Physocarpus malvaceus*	Mallow ninebark	PHMA5	*Physocarpus malvaceus* (Greene) Kuntze
PHOR	*Physaria oregana*	Oregon twinpod	PHOR2	*Physaria oregona* S. Wats.
POCU	*Poa cusickii*	Skyline bluegrass	POFEF	*Poa fendleriana* ssp. *Fendleriana* (Steud.) Vasey
POFR	*Potentilla fruticosa*	Shrubby cinquefoil	PEFL15	*Pentaphyloides floribunda* (Pursh) A.Love
PONE	*Poa nervosa*	Wheeler bluegrass	PONE2	*Poa nervosa* (Hook.) Vasey
PONE2	*Poa nevadensis*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
PONE4	*Polygonum newberri*	Newberry's knotweed	PONE5	*Polygonum newberry* Small
PONE5	*Poa nemoralis*	Wood bluegrass	PONE	*Poa nemoralis* L.
POPU	*Polemonium pulcherrimum*	Skunkleaf polemonium	POPU3	*Polemonium pulcherrimum* Hook.
POPU3	*Potentilla pulcherrima*	Beautiful cinquefoil	POPU4	*Potentilla pulcherrima* Lehm.
POSA	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POSA3	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POTR	*Populus tremuloides*	Quaking aspen	POTR5	*Populus tremuloides* Michx.
POTR2	*Populus trichocarpa*	Black cottonwood	POBAT	*Populus balsamifera* ssp. *trichocarpa* (Torr. & Gray ex Hook.) Brayshaw
PUTR	*Purshia tridentata*	Antelope bitterbrush	PUTR2	*Purshia tridentata* (Pursh) DC.
PYSE	*Pyrola secunda* L.	Sidebells wintergreen	ORSE	*Orthilia secunda* (L.) House
QUGA	*Quercus garryana*	Oregon white oak	QUGA4	*Quercus garryana* Dougl. ex Hook.
QUSA	*Quercus sadleriana*	Deer oak	QUSA2	*Quercus sadleriana* R. Br. Campst.
RHAL	*Rhododendron albiflorum*	Alderleaf buckthorn	RHAL	*Rhamnus alnifolia* L.Her.

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RHAL	*Rhododendron albiflorum*	Cascade azalea	RHAL2	*Rhododendron albiflorum* Hook.
RHMA	*Rhododendron macrophyllum*	Pacific rhododendron	RHMA3	*Rhododendron macrophyllum* D. Don ex G. Don
RHPU	*Rhamnus purshiana*	Pursh's buckthorn	FRPU7	*Frangula purshiana* (DC.) Cooper
RIMO	*Ribes montigenum*	Gooseberry currant	RIMO2	*Ribes montigenum* McClatchie
RIMO2	*Ribes mogollonicum*	Wolf's currant	RIWO	*Ribes wolfii* Rothrock
RIVI	*Ribes viscosissimum*	Sticky currant	RIVI3	*Ribes viscosissimum* Pursh
ROSA	*Rosa* spp.	Rose		
SAAR4	*Saxifraga arguta*	Brook saxifrage	SAOD5	*Saxifraga odontoloma* Piper
SAEX	*Salix exigua*	Dusky willow	SAME2	*Salix melanopsis* Nutt.
SALA	*Sagittaria latifolia*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALA2	*Salix lasiandra*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALA2	*Salix lasiandra*	Shining willow	SALU	*Salix lucida* Muhl.
SALIX	*Salix* spp.	Willow		
SALU	*Salix lutea*	Yellow willow	SALU2	*Salix lutea* Nutt.
SCAN	*Scutellaria angustifolia*	Narrowlead skullcap	SCAN3	*Scutellaria angustifolia* Pursh
SCIRPUS	*Scirpus* spp.	Bullrush		
SCMI	*Scirpus microcarpus*	Panicled bulrush	SCMI2	*Scirpus microcarpus* J. & K. Presl
SCORIA	*Scoria* derived soil	Scoria		
SIHY	*Sitanion hystrix* (Nutt.) J.G. Sm.	Bottlebrush squirreltail	ELEL5	Elymus elymoides (Rat.) Swezey
SMST	*Smilacina stellata* (L.) Desf.	Starry false Solomon's seal	MAST4	*Maianthemum stellatum* (L.) Link

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
SPBE	*Spiraea betulifolia*	White spirea	SPBE2	*Spiraea betulifolia* Pallas
SPDE	*Spiraea densiflora* Nutt. ex Greenm.	Mountain spirea	SPSPS	*Spiraea splendens* var. *splendens* Baumann ex K. Koch
SPIRAEA	*Spiraea* spp.	Spirea		
STAM	*Streptopus amplexifolius*	Claspleaf twistedstalk	STAM2	*Streptopus amplexifolius* (L.) DC.
STCO	*Stipa columbiana*	Dore's needlegrass	STNED	*Stipa nelsonii* ssp. *Dorei* Barkworth & Maze
STCO2	*Stipa comata*	Needle and thread	STCO4	*Stipa comata* Trin. & Rupr.
STCO4	*Stachys cooleyae*	Great hedgenettle	STCI2	*Stachys ciliata* Epling
STIPA	*Stipa* spp.	Needlegrass		
STJA	*Stellaria jamesiana*	Tuber starwort	PSJA2	*Pseudostellaria jamesiana* (Torr.) W.A. Weber & R.L. Hartman
STOC	*Stipa occidentalis*	Western needlegrass	STOC2	*Stipa occidentalis* Thurb. ex S. Watts
STOC2	*Stenanthium occidentale*	Western stenanthium	STOC	*Stenanthium occidentale* Gray
STREP	*Streptopus* spp.			
STRO	*Streptopus roseus*	Rosy twistedstalk	STRO4	*Streptopus roseus* Michx.
STTH	*Stipa thurberiana*	Thurber's needlegrass	STTH2	*Stipa thurberiana* Piper
SYMO	*Symphoricarpos mollis*	Trailing snowberry	SYHE	*Symphoricarpos hesperius* G.N. Jones
SYMPH	*Symphoricarpos* spp.	Snowberry		
SYOR	*Symphoricarpos oreophilus*	Whorteleaf snowberry	SYOR2	*Symphoricarpos oreophilus* Gray
TABR	*Taxus brevifolia*	Pacific yew	TABR2	*Taxus brevifolia* Nutt.
TALUS	*Talus slopes*			
TIUN	*Tiarella unifoliata*	Oneleaf foamflower	TITRU	*Tiarella trifoliata* var. *unifoliata* (Hook.) Kurtz

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
TRCA	*Trisetum canescens*	Tall oatgrass	TRCEC	*Trisetum cernuum* var. *canescens* (Buckl.) Beal
TRCA3	*Trautvetteria caroliniensis*	Carolina bugbane	TRCA	*Trautvetteria caroliniensis* (Walt.) Vail
TRCE	*Trisetum cernuum*	Nodding oatgrass	TRCE2	*Trisetum cernuum* Trin.
TRLA2	*Trientalis latifolia*	Broadleaf starflower	TRBOL	*Trientalis borealis* ssp. *latifolia* (Hook.) Hulten
VAAL	*Vaccinium alaskense* T.J. Howell	Ovalleaf blueberry	VAOV	*Vaccinium ovalifolium* Sm.
VACA	*Vaccinium caespitosum*	Dwarf blueberry	VACE	*Vaccinium cespitosum* Michx.
VACCI	*Vaccinium* spp.	Huckleberries		
VAGL	*Vaccinium globulare* Rydb.	Blue huckleberry	VAME	*Vaccinium membranaceum* Doug. ex Torr.
VAMY	*Vaccinium myrtillus*	Whortleberry	VAMY2	*Vaccinium myrtillus* L.
VAOC2	*Vaccinium occidentale*	Bog blueberry	VAUL	*Vaccinium uliginosum* L.
VAOC	*Valeriana occidentalis*	Western valerian	VAOC2	*Valeriana occidentalis* Heller
VEAN	*Veronica anagallis-aquatica*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VECA	*Veratrum californicum*	California false hellebore	VECA2	*Veratrum californicum* Dur.
VECA2	*Veronica catenata*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VERAT	*Veratrum* spp.	False hellebore		

Sort 2: Ecoclass Scientific Name

The following list is in alphabetical order by scientific name (second column).

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ABLA2	*Abies lasiocarpa* A. Murray bis	Subalpine fir	ABBI2	*Abies bifolia* A. Murray bis only for the Blue and Wallowa Mountains and the Colville NF
ABMAS	*Abies magnifica* var. *shastensis* Lemmon	Shasta red fir	ABSH	*Abies X shastensis* (Lemmon) Lemmon
ACGLD	*Acer glabrum douglasii*	Douglas maple	ACGLD4	*Acer glabrum* var. *douglasii* (Hook.) Dippel
AGCR	*Agropyron cristatum*	Desert wheatgrass	AGDE2	*Agropyron desertorum* (Fisch. ex Linlc.) J.A. Schultes
AGIN	*Agropyron inermis*	Beardless wheatgrass	PSSPI	*Pseudoroegneria spicata* ssp. *inermis* (Scribr. & J.G. Sm.) A. Love
AGSP	*Agropyron spicatum* Pursh	Bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata* (Pursh) A. Love
ALPA2	*Allium parvum*	Small onion	ALPA3	*Allium parvum* Kellogg
ALIN	*Alnus incana*	Mountain alder	ALIN2	*Alnus incana* (L.) Moench
ALRH	*Alnus rhombifolia*	White alder	ALRH2	*Alnus rhombifolia* Nutt.
ALSI	*Alnus sinuata*	Sitka alder	ALVIS	*Alnus viridis* ssp. *sinuate* (Regel) A.& D. Love
ALTE	*Alnus tenuifolia*	Thinleaf alder	ALINT	*Alnus incana* ssp. *tenuifolia*
AMAL2	*Amaranthus albus*	Prostrate pigweed	AMAL	*Amaranthus albus* L.
AMAL	*Amelanchier alnifolia*	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roemer
ARNU2	*Arabis nuttalli*	Nuttall's rockcress	ARNU	*Arabis nuttallii* B.L. Robins
ARTH2	*Arabis thaliana* L.	Mouseear cress	ARTH	*Arabidopsis thaliana* (L.) Heynh.
ARNU3	*Aralia nudicaulis*	Wild sarsaparilla	ARNU2	*Aralia nudicaulis* L.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARPA	*Arctostaphylos patula*	Greenleaf manzanita	ARPA6	*Arctostaphylos patula* Greene
ARVI	*Arctostaphylos viscida*	Sticky whiteleaf manzanita	ARVI4	*Arctostaphylos viscida* Parry
ARPA6	*Arctostaphylos parviflora*	Gravel manzanita	ARPA5	*Arctostaphylos X parviflora* T.J. Hoew (Pro. sp.)
ARCO2	*Arenaria congesta*	Ballhead sandwort	ARCO5	*Arenaria congesta* Nutt.
ARNU	*Arenaria nuttalli*	Nuttall's sandwort	MINUN2	*Minuartia nuttallii* ssp. *nuttallii* (Pax.) Briq.
ARLO3	*Aristida longiseta* Steud.	Fendler threeawn	ARPUL	*Aristida purpurea* var. *longiseta* (Steud.) Vasey
ARLO	*Arnica longifolia*	Spearleaf arnica	ARLO6	*Arnica longifolia* D.C. Eat.
ARLA	*Arnica latifolia*	Broadleaf arnica	ARLA8	*Arnica latifolia* Bong.
ARCO	*Arnica cordifolia*	Heartleaf arnica	ARCO9	*Arnica cordifolia* Hook.
ARRI	*Artemisia rigida*	Stiff sagebrush	ARRI2	*Artemisia rigida* (Nutt.) Gray
ARCA	*Artemisia cana*	Silver sage	ARCA13	*Artemisia cana* Pursh
ARNO	*Artemisia nova*	Alkali sagebrush	ARARL	*Artemisia arbuscula* ssp. *longiloba* (Osterhout) L. Shultz
ARAR	*Artemisia arbuscula*	Low sagebrush	ARAR8	*Artemisia arbuscula* Nutt.
ARTR	*Artemisia tridentata*	Big sagebrush	ARTR2	*Artemisia tridentata* Nutt.
ARTR2	*Artemisia tripartita*	Threetip sagebrush	ARTR4	*Artemisia tripartita* Rydb.
ARTRS	*Artemisia tridentata spiciformis*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle

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ARTRVX	*Artemisia tridentata vaseyana*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARTRW	*Artemisia tridentata wyomingensis*	Basin big sagebrush	ARTRT	*Artemisia tridentata* ssp. *tridentata* Nutt.
ARPA5	*Artemisia papposa*	Fuzzy sagebrush	ARPA16	*Artemisia papposa* Blake & Cronq.
ASCA3	*Asarum caudatum*	British Columbia wildginger	ASCA2	*Asarum caudatum* Lindl.
ASDE	*Aspidotis densa*	Indian's dream	ASDE6	*Aspidotis densa* (Brack.) Lellinger
ASMO	*Aster modestus*	Modest aster	ASMO3	*Aster modestus* Lindl.
ASLE5	*Aster leiodes*	Cutleaf goldenweed	MACAC3	*Machaeranthera canescens* ssp. *canescens* var. *canescens* (Pursh) Gray
ASLE2	*Aster ledophyllus*	Cascade aster	ASLE3	*Aster ledophyllus* (Gray) Gray
ASCA2	*Aster campestris*	Meadow aster	ASCA6	*Aster campestris* Nutt.
ASLE3	*Astragalus leibergii*	Leiberg's milkvetch	ASLE5	*Astragalus leibergii* M.E. Jones
ASLE	*Astragalus lentiginosus*	Specklepod milkvetch	ASLE8	*Astragalus lentiginosus* Dougl. ex Hook.
ASCU4	*Astragalus cusickii*	Cusick's milkvetch	ASCU5	*Astragalus cusickii* Gray
BASA	*Balsamorhiza sagittata*	Arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata* (Pursh) Nutt.
BEAQ	*Berberis aquifolium* Pursh	Hollyleaved barberry	MAAQ2	*Mahonia aquifolium* (Pursh) Nutt.
BENE	*Berberis nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
BERE	*Berberis repens* Lindl.	Oregongrape	MARE11	*Mahonia repens* (Lindl.) G. Don
BROMUS	*Bromus* spp.	Bromegrass		

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BRCA	*Bromus carinatus*	California brome	BRCA5	*Bromus carinatus* Hook. & Arn.
CACA	*Calamagrostis canadensis*	Bluejoint	CACA4	*Calamagrostis canadensis* (Michx.) Beauv.
CANE	*Calamagrostis neglecta*	Slimstem reedgrass	CASTS5	*Calamagrostis stricta* ssp. *stricta* var. *stricta* (Timm) Koel.
CADE3	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADE	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CABI	*Caltha biflora*	Howell's marshmarigold	CALEH2	*Caltha leptosepala* ssp. *Howellii* (Huth) P.G. Sm.
CACU	*Camassia cusickii*	Cusick's camas	CACU2	*Camassia cusickii* S. Wats
CANU5	*Carduus nutans*	Nodding plumeless thistle	CANU4	*Carduus nutans* L.
CADE	*Carex deweyana*	Taperfruit shortscale sedge	CALE24	*Carex leptopoda* Mackenzie
CACU2	*Carex cusickii*	Cusick's sedge	CACU5	*Carex cusickii* Mackenzie ex Piper & Beattie
CACA4	*Carex canescens*	Silvery sedge	CACA11	*Carex canescens* L.
CALE8	*Carex leptalea*	Bristly stalked sedge	CALE10	*Carex leptalea* Wahlenb.
CADI	*Carex disperma*	Softleaf sedge	CADI6	*Carex disperma* Dewey
CAEU	*Carex eurycarpa*	Widefruit sedge	CAAN15	*Carex angustata* Boott
CAGE	*Carex geyeri*	Elk sedge	CAGE2	*Carex geyeri* Boott
CAHO	*Carex hoodii*	Hood's sedge	CAHO5	*Carex hoodii* Boott
CAIN3	*Carex interrupta*	Greenfruit sedge	CAIN17	*Carex interrupta* Boeckl.

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CALA3	*Carex lanuginosa*	Knotroot reedgrass	CALA3	*Calamagrostis laxtea* Beal
CALA3	*Carex lanuginosa*	Woolly sedge	CALA30	*Carex lanuginosa* Michx.
CALA4	*Carex lasiocarpa*	Woollyfruit sedge	CALA11	*Carex lasiocarpa* Ehrh.
CALE5	*Carex lenticularis*	Tufted sedge	CALE8	*Carex lenticularis* Michx.
CABR	*Carex breweri*	Brewer's sedge	CABR12	*Carex breweri* Boott
CARO2	*Carex rostrata*	Beaked sedge	CARO6	*Carex rostrata* Stokes
CAAM	*Carex amplifolia*	Bigleaf sedge	CAAM10	*Carex amplifolia* Boott
CANO	*Carex nova*	Black sedge	CANO3	*Carex nova* Bailey
CANU4	*Carex nudata*	Naked sedge	CANU5	*Carex nudata* W. Boott
CASC5	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CAPE	*Carex pennsylvanica*	Longstolen sedge	CAIN9	*Carex inops* Bailey
CAREX	*Carex* spp.	Sedges		
CARO	*Carex rossii*	Ross' sedge	CARO5	*Carex rossii* Boott
CAVE	*Carex vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CASC	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CASI3	*Carex sitchensis* Prescott ex Bong.	Sitka sedge	CAAQD	*Carex aquatilis* var. *dives* (Holm) Kukenth.
CAVEV	*Carex vesicaria* var. *vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CAME	*Cassiope mertensiana*	Western moss heather	CAME7	*Cassiope mertensiana* (Bong.) D. Don

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CACH	*Castanopsis chrysophylla*	Golden chinkapin	CACH6	*Castanopsis chrysophylla* (Dougl. ex Hook.) A. DC.
CERE2	*Celtis reticulata* Torr.	Netleaf hackberry	CELAR	*Celtis laevigata* var. *reticulata* (Torr.) L. Benson
CELE	*Cercocarpus ledifolius*	Curlleaf mountain-mahogany	CELE3	*Cercocarpus ledifolius* Nutt.
CHVI	*Chrysothamnus viscidiflorus*	Green rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus* (Hook.) Nutt.
CLPY	*Cladothamnus pyroliflorus*	Copperbrush	ELPY	*Elliottia pyroliflorus* (Bong.) S.W. Brim & P.F. Stevens
CLUN	*Clintonia uniflora*	Bride's bonnet	CLUN2	*Clintonia uniflora* (Menzies ex J.A. & J.H. Schultes) Kunth
COOC2	*Coptis occidentalis*	Oregon goldthread	COLA3	*Coptis laciniata* Gray
COCA	*Cornus canadensis*	Bunchberry dogwood	COCA13	*Cornus canadensis* L.
COOC	*Cornus occidentalis*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
CONU	*Cornus nuttallii*	Pacific dogwood	CONU4	*Cornus nuttallii* Audubon ex Torr. & Gray
COST	*Cornus stolonitera*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
COCO	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
COCO2	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
CRDO	*Crataegus douglasii*	Black hawthorn	CRDO2	*Crataegus douglasii* Lindl.
DIHO	*Disporum hookeri*	Drops of gold	DIHO3	*Disporum hookeri* (Torr.) Nichols.

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DIST	*Distichlis stricta*	Inland saltgrass	DISP	*Distichlis spicata* (L.) Greene
ELPA	*Eleocharis palustris*	Common spikerush	ELPA3	*Eleocharis palustris* (L.) Roemer & J.A. Schultes
ELPA2	*Eleocharis pauciflora*	Fewflower spikerush	ELQU2	*Eleocharis quinqueflora* (F.X. Hartmann) Schwartz
ELPA3	*Eleocharis parvula*	Dwarf spikerush	ELPA5	*Eleocharis parvula* (Roemer & J.A. Schultes) Link ex Bluff, Nees & Schauer
ELCI	*Elymus cinereus*	Basin wildrye	LECI4	*Leymus cinereus* (Scribn. & Merr.) A. Love
ERPE3	*Eragrostis pectinacea*	Tufted lovegrass	ERPE	*Eragrostis pectinacea* (Michx.) Nees ex Steud.
ERSP4	*Eriastrum sparsiflorum*	Great Basin woolstar	ERSP3	*Eriastrum sparsiflorum* (Eastw.) Mason
ERPU	*Erigeron pumilus*	Shaggy fleabane	ERPU2	*Erigeron pumilus* Nutt.
ERPE	*Erigeron peregrinus*	Subalpine fleabane	ERPE3	*Erigeron peregrinus* (Banks ex Pursh) Greene
ERSP	*Erigeron speciosus*	Aspen fleabane	ERSP4	*Erigeron speciosus* (Lindl.) D.C.
ERCO	*Erigeron compositus*	Cutleaf daisy	ERCO4	*Erigeron compositus* Pursh
ERCO4	*Erigeron coulteri*	Large mountain fleabane	ERCO6	*Erigeron coulteri* Porter
ERSP3	*Erigonum sphaerocephalum*	Rock buckwheat	ERSP7	*Eriogonum sphaerocephalum* Dougl. ex Benth
ERNI	*Eriogonum niveum*	Snow buckwheat	ERNI2	*Eriogonum niveum* Dougl. ex Benth.
ERHE	*Eriogonum heracleoides*	Parsnipflower buckwheat	ERHE2	*Eriogonum heracleoides* Nutt.
ERTH	*Eriogonum thymoides*	Thymeleaf buckwheat	ERTH4	*Eriogonum thymoides* Benth.
ERST2	*Eriogonum strictum*	Blue Mountain buckwheat	ERST4	*Eriogonum strictum* Benth.

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ERLA	*Eriophyllum lanatum*	Woolly eriophyllum	ERLA6	*Eriophyllum lanatum* (Pursh) Forbes
ERMO	*Erythronium montanum*	White avalanchelily	ERMO8	*Erythronium montanum* S. Wats.
ERHE2	*Erythronium hendersonii*	Henderson's fawnlily	ERHE7	*Erythromium hendersonii* S. Wats.
EULA	*Eurotia lanata*	Winterfat	KRLA2	*Krascheninnikovia lanata* (Pursh) Guldenstaedt
FERU	*Festuca rubra*	Red fescue	FERU2	*Festuca rubra* L.
GATR2	*Galium tricornatum*	Roughfruit corn bedstraw	GATR6	*Galium tricornutum* Dandy
GATR	*Galium triflorum*	Fragrant bedstraw	GATR3	*Galium triflorum* Michx.
GATR3	*Galium trifidum*	Threepetal bedstraw	GATR2	*Galium trifidum* L.
GLNE	*Glossopetalon nevadense*	Spiny greasebush	GLSPA	*Glossopetalon spinescens* var. *Adrdum* M.E. Jones
GYDR	*Gymnocarpium dryopteris*	Pacific oakfern	GYDI2	*Gymnocarpium disjunctum* (Rupr.) Sarvela
HAST	*Haplopappus stenophyllus* Gray	Narrowleaf goldenweed	STST5	*Stenotus stenophyllus* (Gray) Greene
HELA	*Heracleum lanatum*	Mountain sunflower	HELA	*Helianthus X laetifloris* Pers. (Pro sp.)
HELA	*Heracleum lanatum*	Common cowparsnip	HEMA80	*Heracleum maximum* Bartr.
HODU	*Holodiscus dumosus*	Oceanspray	HODI	*Holodiscus discolor* (Pursh) Maxim.
HULSEA	*Hulsea* spp.	Hulsea		
JUBA2	*Juncus balticus*	Baltic rush	JUBA	*Juncus balticus* Willd. (Suksdorf) C.L. Hitchc.

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JUCO	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
JUCO4	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
KOCR	*Koeleria cristata*	Prairie Junegrass	KOMA	*Koeleria macrantha* (Leded.) J.A. Schultes
LALA3	*Lathyrus latifolius*	Perennial peavine	LALA4	*Lathyrus latifolius* L.
LALA2	*Lathyrus lanszwertii*	Thickleaf peavine	LALA3	*Lathyrus lanszwertii* Kellogg
LIBO3	*Lilium bolanderi*	Bolander's lily	LIBO	*Lilium bolanderi* S. Wats
LINU	*Linanthastrum nuttallii*	Nuttall's deserttrumpets	LINUN	*Linanthus nuttallii* ssp. *nuttalli* (Gray) Greene ex Milliken
LIBO2	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO2	*Linnaea borealis*	Bolander's deserttrumpets	LIBO2	*Linanthus bolanderi* (Gray) Greene
LIBO	*Listera borealis*	Northern tway blade	LIBO4	*Listera borealis* Marong.
LOMA	*Lomatium macrocarpum*	Bigseed biscuitroot	LOMA3	*Lomatium macrocarpum* (Nutt. ex Torr. & Gray) Coult. & Rose
LOMA	*Lomatium macrocarpum*	Seaside lobularia	LOMA	*Lobularia maritima* (L.) Desv.
LOM	*Lomatium* spp.	Biscuitroot		
LULA2	*Lupinus laxiflorus*	Spur lupine	LUARL5	*Lipinus argenteus* ssp. *argenteus* var. *laxiflorus* (Dougl. ex Lindl.) Dorn
LULA	*Lupinus latifolius*	Broadleaf lupine	LULA4	*Lupinus latifolius* Lindl. ex J.G. Agardh
LUP	*Lupinus* spp.	Lupines		

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LUPI	*Lupinus* spp.	Lupines		
LUSE	*Lupinus sericeus*	Silky lupine	LUSE4	*Lupinus sericeus* Pursh
LUSE	*Lupinus sericeus*	Creeping silverback	LUSE	*Luina serpentina* Cronq.
LUZULA	*Luzula* spp.	Woodrush		
LUHI	Luzula hitchcockii	Hitchcock's smooth woodrush	LUGLH	*Luzula glabrata* var. *hitchcockii* (Hamet-Ahti) Dorn
LYAM	*Lysichitum americanus*	American skunkcabbage	LYAM3	*Lysichiton americanus* Hulten & St. John
LYAM	*Lysichitum americanus*	American waterhorehound	LYAM	*Lycopus americanus* Muhl. ex W. Bart.
MADI	*Madia dissitiflora*	Grassy tarweed	MAGR3	*Madia gracilis* (Sm.) Keck & J. Clausen ex Applegate
MANE	*Mahonia nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
MADI2	*Maianthemum dilatatum*	Twoleaf false Solomon's seal	MADI	*Maianthemum dilatatum* (Wood) A. Nels. & J.F. Macbr.
MANE2	*Malva neglecta*	Common mallow	MANE	*Malva neglecta* Wallr.
MOSI	*Montia sibirica*	Siberian springbeauty	CLSIS	*Claytonia sibirica* var. *sibirica*
OSCH	*Osmorhiza chilensis*	Sweetcicely	OSBE	*Osmorhiza berteroi* DC.
OXALIS	*Oxalis* spp.	Oxalis		
PAMY	*Pachistima myrsinites*	Boxleaf myrtle	PAMY	*Paxistima myrsinites* (Pursh) Raf.
PELA	*Penstemon laetus*	Mountain blue penstemon	PELA7	*Penstemon laetus* Gray
PENST	*Penstemon* spp.	Penstemon		

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PERA3	*Peraphyllum ramosissimum*	Squaw apple	PERA4	*Peraphyllum ramosissimum* Nutt.
PERA3	*Peraphyllum ramosissimum*	Rattan's beardtongue	PERA3	*Penstemon rattanii* Gray
PEFR2	*Petasites frigidus*	Arctic sweet coltsfoot	PEFR5	*Petasites frigidus* (L.) Fries
PHHE	*Phacelia heterophylla*	Varileaf phacelia	PHHE2	*Phacelia heterophylla* Pursh
PHLE2	*Philadelphus lewisii*	Lewis' mockorange	PHLE4	*Phildelphus lewisii* Pursh
PHCO2	*Phlox colubrina*	Snake River phlox	PHCO10	*Phlox colubrina* Wherry & Constance
PHHE2	*Phlox hendersonii*	Henderson's phlox	PHHE9	*Phlox hendersonii* (E. Nels.) Cronq.
PHOR	*Physaria oregana*	Oregon twinpod	PHOR2	*Physaria oregona* S. Wats.
PHMA	*Physocarpus malvaceus*	Mallow ninebark	PHMA5	*Physocarpus malvaceus* (Greene) Kuntze
PHCA3	*Physocarpus capitatus*	Pacific ninebark	PHCA11	*Physocarpus capitatus* (Pursh) Kuntze
POSA	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POCU	*Poa cusickii*	Skyline bluegrass	POFEF	*Poa fendleriana* ssp. *Fendleriana* (Steud.) Vasey
PONE	*Poa nervosa*	Wheeler bluegrass	PONE2	*Poa nervosa* (Hook.) Vasey
PONE2	*Poa nevadensis*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
PONE5	*Poa nemoralis*	Wood bluegrass	PONE	*Poa nemoralis* L.
POSA3	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POPU	*Polemonium pulcherrimum*	Skunkleaf polemonium	POPU3	*Polemonium pulcherrimum* Hook.
PONE4	*Polygonum newberri*	Newberry's knotweed	PONE5	*Polygonum newberry* Small

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POTR	*Populus tremuloides*	Quaking aspen	POTR5	*Populus tremuloides* Michx.
POTR2	*Populus trichocarpa*	Black cottonwood	POBAT	*Populus balsamifera* ssp. *trichocarpa* (Torr. & Gray ex Hook.) Brayshaw
POFR	*Potentilla fruticosa*	Shrubby cinquefoil	PEFL15	*Pentaphyloides floribunda* (Pursh) A.Love
POPU3	*Potentilla pulcherrima*	Beautiful cinquefoil	POPU4	*Potentilla pulcherrima* Lehm.
PUTR	*Purshia tridentata*	Antelope bitterbrush	PUTR2	*Purshia tridentata* (Pursh) DC.
PYSE	*Pyrola secunda* L.	Sidebells wintergreen	ORSE	*Orthilia secunda* (L.) House
QUGA	*Quercus garryana*	Oregon white oak	QUGA4	*Quercus garryana* Dougl. ex Hook.
QUSA	*Quercus sadleriana*	Deer oak	QUSA2	*Quercus sadleriana* R. Br. Campst.
RHPU	*Rhamnus purshiana*	Pursh's buckthorn	FRPU7	*Frangula purshiana* (DC.) Cooper
RHMA	*Rhododendron macrophyllum*	Pacific rhododendron	RHMA3	*Rhododendron macrophyllum* D. Don ex G. Don
RHAL	*Rhododendron albiflorum*	Alderleaf buckthorn	RHAL	*Rhamnus alnifolia* L.Her.
RHAL	*Rhododendron albiflorum*	Cascade azalea	RHAL2	*Rhododendron albiflorum* Hook.
RIMO2	*Ribes mogollonicum*	Wolf's currant	RIWO	*Ribes wolfii* Rothrock
RIVI	*Ribes viscosissimum*	Sticky currant	RIVI3	*Ribes viscosissimum* Pursh
RIMO	*Ribes montigenum*	Gooseberry currant	RIMO2	*Ribes montigenum* McClatchie
ROSA	*Rosa* spp.	Rose		
SALA	*Sagittaria latifolia*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SAEX	*Salix exigua*	Dusky willow	SAME2	*Salix melanopsis* Nutt.

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SALA2	*Salix lasiandra*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALA2	*Salix lasiandra*	Shining willow	SALU	*Salix lucida* Muhl.
SALIX	*Salix* spp.	Willow		
SALU	*Salix lutea*	Yellow willow	SALU2	*Salix lutea* Nutt.
SAAR4	*Saxifraga arguta*	Brook saxifrage	SAOD5	*Saxifraga odontoloma* Piper
SCIRPUS	*Scirpus* spp.	Bullrush		
SCMI	*Scirpus microcarpus*	Panicled bulrush	SCMI2	*Scirpus microcarpus* J. & K. Presl
SCORIA	*Scoria* derived soil	Scoria		
SCAN	*Scutellaria angustifolia*	Narrowlead skullcap	SCAN3	*Scutellaria angustifolia* Pursh
SIHY	*Sitanion hystrix* (Nutt.) J.G. Sm.	Bottlebrush squirreltail	ELEL5	Elymus elymoides (Rat.) Swezey
SMST	*Smilacina stellata* (L.) Desf.	Starry false Solomon's seal	MAST4	*Maianthemum stellatum* (L.) Link
SPDE	*Spiraea densiflora* Nutt. ex Greenm.	Mountain spirea	SPSPS	*Spiraea splendens* var. *splendens* Baumann ex K. Koch
SPIRAEA	*Spiraea* spp.	Spirea		
SPBE	*Spiraea betulifolia*	White spirea	SPBE2	*Spiraea betulifolia* Pallas
STCO4	*Stachys cooleyae*	Great hedgenettle	STCI2	*Stachys ciliata* Epling
STJA	*Stellaria jamesiana*	Tuber starwort	PSJA2	*Pseudostellaria jamesiana* (Torr.) W.A. Weber & R.L. Hartman
STOC2	*Stenanthium occidentale*	Western stenanthium	STOC	*Stenanthium occidentale* Gray

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STIPA	*Stipa* spp.	Needlegrass		
STCO2	*Stipa comata*	Needle and thread	STCO4	*Stipa comata* Trin. & Rupr.
STCO	*Stipa columbiana*	Dore's needlegrass	STNED	*Stipa nelsonii* ssp. *Dorei* Barkworth & Maze
STOC	*Stipa occidentalis*	Western needlegrass	STOC2	*Stipa occidentalis* Thurb. ex S. Watts
STTH	*Stipa thurberiana*	Thurber's needlegrass	STTH2	*Stipa thurberiana* Piper
STRO	*Streptopus roseus*	Rosy twistedstalk	STRO4	*Streptopus roseus* Michx.
STREP	*Streptopus* spp.			
STAM	*Streptopus amplexifolius*	Claspleaf twistedstalk	STAM2	*Streptopus amplexifolius* (L.) DC.
SYMO	*Symphoricarpos mollis*	Trailing snowberry	SYHE	*Symphoricarpos hesperius* G.N. Jones
SYMPH	*Symphoricarpos* spp.	Snowberry		
SYOR	*Symphoricarpos oreophilus*	Whorteleaf snowberry	SYOR2	*Symphoricarpos oreophilus* Gray
TALUS	*Talus slopes*			
TABR	*Taxus brevifolia*	Pacific yew	TABR2	*Taxus brevifolia* Nutt.
TIUN	*Tiarella unifoliata*	Oneleaf foamflower	TITRU	*Tiarella trifoliata* var. *unifoliata* (Hook.) Kurtz
TRCA3	*Trautvetteria caroliniensis*	Carolina bugbane	TRCA	*Trautvetteria caroliniensis* (Walt.) Vail
TRLA2	*Trientalis latifolia*	Broadleaf starflower	TRBOL	*Trientalis borealis* ssp. *latifolia* (Hook.) Hulten
TRCA	*Trisetum canescens*	Tall oatgrass	TRCEC	*Trisetum cernuum* var. *canescens* (Buckl.) Beal

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
TRCE	*Trisetum cernuum*	Nodding oatgrass	TRCE2	*Trisetum cernuum* Trin.
VACA	*Vaccinium caespitosum*	Dwarf blueberry	VACE	*Vaccinium cespitosum* Michx.
VACCI	*Vaccinium* spp.	Huckleberries		
VAGL	*Vaccinium globulare* Rydb.	Blue huckleberry	VAME	*Vaccinium membranaceum* Doug. ex Torr.
VAMY	*Vaccinium myrtillus*	Whortleberry	VAMY2	*Vaccinium myrtillus* L.
VAAL	*Vaccinium alaskense* T.J. Howell	Ovalleaf blueberry	VAOV	*Vaccinium ovalifolium* Sm.
VAOC2	*Vaccinium occidentale*	Bog blueberry	VAUL	*Vaccinium uliginosum* L.
VAOC	*Valeriana occidentalis*	Western valerian	VAOC2	*Valeriana occidentalis* Heller
VECA	*Veratrum californicum*	California false hellebore	VECA2	*Veratrum californicum* Dur.
VERAT	*Veratrum* spp.	False hellebore		
VECA2	*Veronica catenata*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VEAN	*Veronica anagallis-aquatica*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*

Sort 3: Plants Code

The following list is in alphabetical order by the PLANTS code (fourth column).

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
BROMUS	*Bromus* spp.	Bromegrass		
CAREX	*Carex* spp.	Sedges		
HULSEA	*Hulsea* spp.	Hulsea		
LOM	*Lomatium* spp.	Biscuitroot		
LUP	*Lupinus* spp.	Lupines		
LUPI	*Lupinus* spp.	Lupines		
LUZULA	*Luzula* spp.	Woodrush		
OXALIS	*Oxalis* spp.	Oxalis		
PENST	*Penstemon* spp.	Penstemon		
ROSA	*Rosa* spp.	Rose		
SALIX	*Salix* spp.	Willow		
SCIRPUS	*Scirpus* spp.	Bullrush		
SCORIA	*Scoria* derived soil	Scoria		
SPIRAEA	*Spiraea* spp.	Spirea		
STIPA	*Stipa* spp.	Needlegrass		
STREP	*Streptopus* spp.			
SYMPH	*Symphoricarpos* spp.	Snowberry		
TALUS	*Talus slopes*			
VACCI	*Vaccinium* spp.	Huckleberries		
VERAT	*Veratrum* spp.	False hellebore		

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ABLA2	*Abies lasiocarpa* A. Murray bis	Subalpine fir	ABBI2	*Abies bifolia* A. Murray bis only for the Blue and Wallowa Mountains and the Colville NF
ABMAS	*Abies magnifica* var. *shastensis* Lemmon	Shasta red fir	ABSH	*Abies X shastensis* (Lemmon) Lemmon
ACGLD	*Acer glabrum douglasii*	Douglas maple	ACGLD4	*Acer glabrum* var. *douglasii* (Hook.) Dippel
AGCR	*Agropyron cristatum*	Desert wheatgrass	AGDE2	*Agropyron desertorum* (Fisch. ex Linlc.) J.A. Schultes
ALIN	*Alnus incana*	Mountain alder	ALIN2	*Alnus incana* (L.) Moench
ALTE	*Alnus tenuifolia*	Thinleaf alder	ALINT	*Alnus incana* ssp. *tenuifolia*
ALPA2	*Allium parvum*	Small onion	ALPA3	*Allium parvum* Kellogg
ALRH	*Alnus rhombifolia*	White alder	ALRH2	*Alnus rhombifolia* Nutt.
ALSI	*Alnus sinuata*	Sitka alder	ALVIS	*Alnus viridis* ssp. *sinuate* (Regel) A.& D. Love
AMAL2	*Amaranthus albus*	Prostrate pigweed	AMAL	*Amaranthus albus* L.
AMAL	*Amelanchier alnifolia*	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roemer
ARAR	*Artemisia arbuscula*	Low sagebrush	ARAR8	*Artemisia arbuscula* Nutt.
ARNO	*Artemisia nova*	Alkali sagebrush	ARARL	*Artemisia arbuscula* ssp. *longiloba* (Osterhout) L. Shultz
ARCA	*Artemisia cana*	Silver sage	ARCA13	*Artemisia cana* Pursh
ARCO2	*Arenaria congesta*	Ballhead sandwort	ARCO5	*Arenaria congesta* Nutt.
ARCO	*Arnica cordifolia*	Heartleaf arnica	ARCO9	*Arnica cordifolia* Hook.
ARLA	*Arnica latifolia*	Broadleaf arnica	ARLA8	*Arnica latifolia* Bong.
ARLO	*Arnica longifolia*	Spearleaf arnica	ARLO6	*Arnica longifolia* D.C. Eat.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARNU2	*Arabis nuttalli*	Nuttall's rockcress	ARNU	*Arabis nuttallii* B.L. Robins
ARNU3	*Aralia nudicaulis*	Wild sarsaparilla	ARNU2	*Aralia nudicaulis* L.
ARPA5	*Artemisia papposa*	Fuzzy sagebrush	ARPA16	*Artemisia papposa* Blake & Cronq.
ARPA6	*Arctostaphylos parviflora*	Gravel manzanita	ARPA5	*Arctostaphylos X parviflora* T.J. Hoew (Pro. sp.)
ARPA	*Arctostaphylos patula*	Greenleaf manzanita	ARPA6	*Arctostaphylos patula* Greene
ARLO3	*Aristida longiseta* Steud.	Fendler threeawn	ARPUL	*Aristida purpurea* var. *longiseta* (Steud.) Vasey
ARRI	*Artemisia rigida*	Stiff sagebrush	ARRI2	*Artemisia rigida* (Nutt.) Gray
ARTH2	*Arabis thaliana* L.	Mouseear cress	ARTH	*Arabidopsis thaliana* (L.) Heynh.
ARTR	*Artemisia tridentata*	Big sagebrush	ARTR2	*Artemisia tridentata* Nutt.
ARTR2	*Artemisia tripartita*	Threetip sagebrush	ARTR4	*Artemisia tripartita* Rydb.
ARTRW	*Artemisia tridentata wyomingensis*	Basin big sagebrush	ARTRT	*Artemisia tridentata* ssp. *tridentata* Nutt.
ARTRVX	*Artemisia tridentata vaseyana*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARTRS	*Artemisia tridentata spiciformis*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARVI	*Arctostaphylos viscida*	Sticky whiteleaf manzanita	ARVI4	*Arctostaphylos viscida* Parry
ASCA3	*Asarum caudatum*	British Columbia wildginger	ASCA2	*Asarum caudatum* Lindl.
ASCA2	*Aster campestris*	Meadow aster	ASCA6	*Aster campestris* Nutt.
ASCU4	*Astragalus cusickii*	Cusick's milkvetch	ASCU5	*Astragalus cusickii* Gray
ASDE	*Aspidotis densa*	Indian's dream	ASDE6	*Aspidotis densa* (Brack.) Lellinger
ASLE2	*Aster ledophyllus*	Cascade aster	ASLE3	*Aster ledophyllus* (Gray) Gray

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ASLE3	*Astragalus leibergii*	Leiberg's milkvetch	ASLE5	*Astragalus leibergii* M.E. Jones
ASLE	*Astragalus lentiginosus*	Specklepod milkvetch	ASLE8	*Astragalus lentiginosus* Dougl. ex Hook.
ASMO	*Aster modestus*	Modest aster	ASMO3	*Aster modestus* Lindl.
BASA	*Balsamorhiza sagittata*	Arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata* (Pursh) Nutt.
BRCA	*Bromus carinatus*	California brome	BRCA5	*Bromus carinatus* Hook. & Arn.
CAAM	*Carex amplifolia*	Bigleaf sedge	CAAM10	*Carex amplifolia* Boott
CAEU	*Carex eurycarpa*	Widefruit sedge	CAAN15	*Carex angustata* Boott
CASI3	*Carex sitchensis* Prescott ex Bong.	Sitka sedge	CAAQD	*Carex aquatilis* var. *dives* (Holm) Kukenth.
CABR	*Carex breweri*	Brewer's sedge	CABR12	*Carex breweri* Boott
CACA4	*Carex canescens*	Silvery sedge	CACA11	*Carex canescens* L.
CACA	*Calamagrostis canadensis*	Bluejoint	CACA4	*Calamagrostis canadensis* (Michx.) Beauv.
CACH	*Castanopsis chrysophylla*	Golden chinkapin	CACH6	*Castanopsis chrysophylla* (Dougl. ex Hook.) A. DC.
CACU	*Camassia cusickii*	Cusick's camas	CACU2	*Camassia cusickii* S. Wats
CACU2	*Carex cusickii*	Cusick's sedge	CACU5	*Carex cusickii* Mackenzie ex Piper & Beattie
CADE3	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADE	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADI	*Carex disperma*	Softleaf sedge	CADI6	*Carex disperma* Dewey
CAGE	*Carex geyeri*	Elk sedge	CAGE2	*Carex geyeri* Boott
CAHO	*Carex hoodii*	Hood's sedge	CAHO5	*Carex hoodii* Boott
CAIN3	*Carex interrupta*	Greenfruit sedge	CAIN17	*Carex interrupta* Boeckl.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CAPE	*Carex pennsylvanica*	Longstolen sedge	CAIN9	*Carex inops* Bailey
CALA4	*Carex lasiocarpa*	Woollyfruit sedge	CALA11	*Carex lasiocarpa* Ehrh.
CALA3	*Carex lanuginosa*	Knotroot reedgrass	CALA3	*Calamagrostis laxtea* Beal
CALA3	*Carex lanuginosa*	Woolly sedge	CALA30	*Carex lanuginosa* Michx.
CALE8	*Carex leptalea*	Bristly stalked sedge	CALE10	*Carex leptalea* Wahlenb.
CADE	*Carex deweyana*	Taperfruit shortscale sedge	CALE24	*Carex leptopoda* Mackenzie
CALE5	*Carex lenticularis*	Tufted sedge	CALE8	*Carex lenticularis* Michx.
CABI	*Caltha biflora*	Howell's marshmarigold	CALEH2	*Caltha leptosepala* ssp. *Howellii* (Huth) P.G. Sm
CAME	*Cassiope mertensiana*	Western moss heather	CAME7	*Cassiope mertensiana* (Bong.) D. Don
CANO	*Carex nova*	Black sedge	CANO3	*Carex nova* Bailey
CANU5	*Carduus nutans*	Nodding plumeless thistle	CANU4	*Carduus nutans* L.
CANU4	*Carex nudata*	Naked sedge	CANU5	*Carex nudata* W. Boott
CARO	*Carex rossii*	Ross' sedge	CARO5	*Carex rossii* Boott
CARO2	*Carex rostrata*	Beaked sedge	CARO6	*Carex rostrata* Stokes
CASC5	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CASC	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CANE	*Calamagrostis neglecta*	Slimstem reedgrass	CASTS5	*Calamagrostis stricta* ssp. *stricta* var. *stricta* (Timm) Koel.
CAVEV	*Carex vesicaria* var. *vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CAVE	*Carex vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CERE2	*Celtis reticulata* Torr.	Netleaf hackberry	CELAR	*Celtis laevigata* var. *reticulata* (Torr.) L. Benson

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CELE	*Cercocarpus ledifolius*	Curlleaf mountain-mahogany	CELE3	*Cercocarpus ledifolius* Nutt.
CHVI	*Chrysothamnus viscidiflorus*	Green rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus* (Hook.) Nutt.
MOSI	*Montia sibirica*	Siberian springbeauty	CLSIS	*Claytonia sibirica* var. *sibirica*
CLUN	*Clintonia uniflora*	Bride's bonnet	CLUN2	*Clintonia uniflora* (Menzies ex J.A. & J.H. Schultes) Kunth
COCA	*Cornus canadensis*	Bunchberry dogwood	COCA13	*Cornus canadensis* L.
COCO	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
COCO2	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
COOC2	*Coptis occidentalis*	Oregon goldthread	COLA3	*Coptis laciniata* Gray
CONU	*Cornus nuttallii*	Pacific dogwood	CONU4	*Cornus nuttallii* Audubon ex Torr. & Gray
COOC	*Cornus occidentalis*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
COST	*Cornus stolonitera*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
CRDO	*Crataegus douglasii*	Black hawthorn	CRDO2	*Crataegus douglasii* Lindl.
DIHO	*Disporum hookeri*	Drops of gold	DIHO3	*Disporum hookeri* (Torr.) Nichols.
DIST	*Distichlis stricta*	Inland saltgrass	DISP	*Distichlis spicata* (L.) Greene
SIHY	*Sitanion hystrix* (Nutt.) J.G. Sm.	Bottlebrush squirreltail	ELEL5	Elymus elymoides (Rat.) Swezey
ELPA	*Eleocharis palustris*	Common spikerush	ELPA3	*Eleocharis palustris* (L.) Roemer & J.A. Schultes
ELPA3	*Eleocharis parvula*	Dwarf spikerush	ELPA5	*Eleocharis parvula* (Roemer & J.A. Schultes) Link ex Bluff, Nees & Schauer
CLPY	*Cladothamnus pyroliflorus*	Copperbrush	ELPY	*Elliottia pyroliflorus* (Bong.) S.W. Brim & P.F. Stevens

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ELPA2	*Eleocharis pauciflora*	Fewflower spikerush	ELQU2	*Eleocharis quinqueflora* (F.X. Hartmann) Schwartz
ERCO	*Erigeron compositus*	Cutleaf daisy	ERCO4	*Erigeron compositus* Pursh
ERCO4	*Erigeron coulteri*	Large mountain fleabane	ERCO6	*Erigeron coulteri* Porter
ERHE	*Eriogonum heracleoides*	Parsnipflower buckwheat	ERHE2	*Eriogonum heracleoides* Nutt.
ERHE2	*Erythronium hendersonii*	Henderson's fawnlily	ERHE7	*Erythromium hendersonii* S. Wats.
ERLA	*Eriophyllum lanatum*	Woolly eriophyllum	ERLA6	*Eriophyllum lanatum* (Pursh) Forbes
ERMO	*Erythronium montanum*	White avalanchelily	ERMO8	*Erythronium montanum* S. Wats.
ERNI	*Eriogonum niveum*	Snow buckwheat	ERNI2	*Eriogonum niveum* Dougl. ex Benth.
ERPE3	*Eragrostis pectinacea*	Tufted lovegrass	ERPE	*Eragrostis pectinacea* (Michx.) Nees ex Steud.
ERPE	*Erigeron peregrinus*	Subalpine fleabane	ERPE3	*Erigeron peregrinus* (Banks ex Pursh) Greene
ERPU	*Erigeron pumilus*	Shaggy fleabane	ERPU2	*Erigeron pumilus* Nutt.
ERSP4	*Eriastrum sparsiflorum*	Great Basin woolstar	ERSP3	*Eriastrum sparsiflorum* (Eastw.) Mason
ERSP	*Erigeron speciosus*	Aspen fleabane	ERSP4	*Erigeron speciosus* (Lindl.) D.C.
ERSP3	*Erigonum sphaerocephalum*	Rock buckwheat	ERSP7	*Eriogonum sphaerocephalum* Dougl. ex Benth.
ERST2	*Eriogonum strictum*	Blue Mountain buckwheat	ERST4	*Eriogonum strictum* Benth.
ERTH	*Eriogonum thymoides*	Thymeleaf buckwheat	ERTH4	*Eriogonum thymoides* Benth.
FERU	*Festuca rubra*	Red fescue	FERU2	*Festuca rubra* L.
RHPU	*Rhamnus purshiana*	Pursh's buckthorn	FRPU7	*Frangula purshiana* (DC.) Cooper
GATR3	*Galium trifidum*	Threepetal bedstraw	GATR2	*Galium trifidum* L.
GATR	*Galium triflorum*	Fragrant bedstraw	GATR3	*Galium triflorum* Michx.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
GATR2	*Galium tricornatum*	Roughfruit corn bedstraw	GATR6	*Galium tricornutum* Dandy
GLNE	*Glossopetalon nevadense*	Spiny greasebush	GLSPA	*Glossopetalon spinescens* var. *Adrdum* M.E. Jones
GYDR	*Gymnocarpium dryopteris*	Pacific oakfern	GYDI2	*Gymnocarpium disjunctum* (Rupr.) Sarvela
HELA	*Heracleum lanatum*	Mountain sunflower	HELA	*Helianthus X laetifloris* Pers. (Pro sp.)
HELA	*Heracleum lanatum*	Common cowparsnip	HEMA80	*Heracleum maximum* Bartr.
HODU	*Holodiscus dumosus*	Oceanspray	HODI	*Holodiscus discolor* (Pursh) Maxim.
JUBA2	*Juncus balticus*	Baltic rush	JUBA	*Juncus balticus* Willd. (Suksdorf) C.L. Hitchc.
JUCO4	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
JUCO	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
KOCR	*Koeleria cristata*	Prairie Junegrass	KOMA	*Koeleria macrantha* (Leded.) J.A. Schultes
EULA	*Eurotia lanata*	Winterfat	KRLA2	*Krascheninnikovia lanata* (Pursh) Guldenstaedt
LALA2	*Lathyrus lanszwertii*	Thickleaf peavine	LALA3	*Lathyrus lanszwertii* Kellogg
LALA3	*Lathyrus latifolius*	Perennial peavine	LALA4	*Lathyrus latifolius* L.
ELCI	*Elymus cinereus*	Basin wildrye	LECI4	*Leymus cinereus* (Scribn. & Merr.) A. Love
LIBO3	*Lilium bolanderi*	Bolander's lily	LIBO	*Lilium bolanderi* S. Wats
LIBO2	*Linnaea borealis*	Bolander's deserttrumpets	LIBO2	*Linanthus bolanderi* (Gray) Greene
LIBO	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO2	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO	*Listera borealis*	Northern tway blade	LIBO4	*Listera borealis* Marong.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
LINU	*Linanthastrum nuttallii*	Nuttall's deserttrumpets	LINUN	*Linanthus nuttallii* ssp. *nuttalli* (Gray) Greene ex Milliken
LOMA	*Lomatium macrocarpum*	Seaside lobularia	LOMA	*Lobularia maritima* (L.) Desv.
LOMA	*Lomatium macrocarpum*	Bigseed biscuitroot	LOMA3	*Lomatium macrocarpum* (Nutt. ex Torr. & Gray) Coult. & Rose
LULA2	*Lupinus laxiflorus*	Spur lupine	LUARL5	*Lipinus argenteus* ssp. *argenteus* var. *laxiflorus* (Dougl. ex Lindl.) Dorn
LUHI	*Luzula hitchcockii*	Hitchcock's smooth woodrush	LUGLH	*Luzula glabrata* var. *hitchcockii* (Hamet-Ahti) Dorn
LULA	*Lupinus latifolius*	Broadleaf lupine	LULA4	*Lupinus latifolius* Lindl. ex J.G. Agardh
LUSE	*Lupinus sericeus*	Creeping silverback	LUSE	*Luina serpentina* Cronq.
LUSE	*Lupinus sericeus*	Silky lupine	LUSE4	*Lupinus sericeus* Pursh
LYAM	*Lysichitum americanus*	American waterhorehound	LYAM	*Lycopus americanus* Muhl. ex W. Bart.
LYAM	*Lysichitum americanus*	American skunkcabbage	LYAM3	*Lysichiton americanus* Hulten & St. John
BEAQ	*Berberis aquifolium* Pursh	Hollyleaved barberry	MAAQ2	*Mahonia aquifolium* (Pursh) Nutt.
ASLE5	*Aster leiodes*	Cutleaf goldenweed	MACAC3	*Machaeranthera canescens* ssp. *canescens* var. *canescens* (Pursh) Gray
MADI2	*Maianthemum dilatatum*	Twoleaf false Solomon's seal	MADI	*Maianthemum dilatatum* (Wood) A. Nels. & J.F. Macbr.
MADI	*Madia dissitiflora*	Grassy tarweed	MAGR3	*Madia gracilis* (Sm.) Keck & J. Clausen ex Applegate
MANE2	*Malva neglecta*	Common mallow	MANE	*Malva neglecta* Wallr.
MANE	*Mahonia nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
BENE	*Berberis nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
BERE	*Berberis repens* Lindl.	Oregongrape	MARE11	*Mahonia repens* (Lindl.) G. Don
SMST	*Smilacina stellata* (L.) Desf.	Starry false Solomon's seal	MAST4	*Maianthemum stellatum* (L.) Link
ARNU	*Arenaria nuttalli*	Nuttall's sandwort	MINUN2	*Minuartia nuttallii* ssp. *nuttallii* (Pax.) Briq.
PYSE	*Pyrola secunda* L.	Sidebells wintergreen	ORSE	*Orthilia secunda* (L.) House
OSCH	*Osmorhiza chilensis*	Sweetcicely	OSBE	*Osmorhiza berteroi* DC.
PAMY	*Pachistima myrsinites*	Boxleaf myrtle	PAMY	*Paxistima myrsinites* (Pursh) Raf.
POFR	*Potentilla fruticosa*	Shrubby cinquefoil	PEFL15	*Pentaphyloides floribunda* (Pursh) A.Love
PEFR2	*Petasites frigidus*	Arctic sweet coltsfoot	PEFR5	*Petasites frigidus* (L.) Fries
PELA	*Penstemon laetus*	Mountain blue penstemon	PELA7	*Penstemon laetus* Gray
PERA3	*Peraphyllum ramosissimum*	Rattan's beardtongue	PERA3	*Penstemon rattanii* Gray
PERA3	*Peraphyllum ramosissimum*	Squaw apple	PERA4	*Peraphyllum ramosissimum* Nutt.
PHCA3	*Physocarpus capitatus*	Pacific ninebark	PHCA11	*Physocarpus capitatus* (Pursh) Kuntze
PHCO2	*Phlox colubrina*	Snake River phlox	PHCO10	*Phlox colubrina* Wherry & Constance
PHHE	*Phacelia heterophylla*	Varileaf phacelia	PHHE2	*Phacelia heterophylla* Pursh
PHHE2	*Phlox hendersonii*	Henderson's phlox	PHHE9	*Phlox hendersonii* (E. Nels.) Cronq.
PHLE2	*Philadelphus lewisii*	Lewis' mockorange	PHLE4	*Phildelphus lewisii* Pursh
PHMA	*Physocarpus malvaceus*	Mallow ninebark	PHMA5	*Physocarpus malvaceus* (Greene) Kuntze
PHOR	*Physaria oregana*	Oregon twinpod	PHOR2	*Physaria oregona* S. Wats.
POTR2	*Populus trichocarpa*	Black cottonwood	POBAT	*Populus balsamifera* ssp. *trichocarpa* (Torr. & Gray ex Hook.) Brayshaw
POCU	*Poa cusickii*	Skyline bluegrass	POFEF	*Poa fendleriana* ssp. *Fendleriana* (Steud.) Vasey

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
PONE5	*Poa nemoralis*	Wood bluegrass	PONE	*Poa nemoralis* L.
PONE	*Poa nervosa*	Wheeler bluegrass	PONE2	*Poa nervosa* (Hook.) Vasey
PONE4	*Polygonum newberri*	Newberry's knotweed	PONE5	*Polygonum newberry* Small
POPU	*Polemonium pulcherrimum*	Skunkleaf polemonium	POPU3	*Polemonium pulcherrimum* Hook.
POPU3	*Potentilla pulcherrima*	Beautiful cinquefoil	POPU4	*Potentilla pulcherrima* Lehm.
POSA	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POSA3	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
PONE2	*Poa nevadensis*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POTR	*Populus tremuloides*	Quaking aspen	POTR5	*Populus tremuloides* Michx.
STJA	*Stellaria jamesiana*	Tuber starwort	PSJA2	*Pseudostellaria jamesiana* (Torr.) W.A. Weber & R.L. Hartman
AGSP	*Agropyron spicatum* Pursh	Bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata* (Pursh) A. Love
AGIN	*Agropyron inermis*	Beardless wheatgrass	PSSPI	*Pseudoroegneria spicata* ssp. *inermis* (Scribr. & J.G. Sm.) A. Love
PUTR	*Purshia tridentata*	Antelope bitterbrush	PUTR2	*Purshia tridentata* (Pursh) DC.
QUGA	*Quercus garryana*	Oregon white oak	QUGA4	*Quercus garryana* Dougl. ex Hook.
QUSA	*Quercus sadleriana*	Deer oak	QUSA2	*Quercus sadleriana* R. Br. Campst.
RHAL	*Rhododendron albiflorum*	Alderleaf buckthorn	RHAL	*Rhamnus alnifolia* L.Her.
RHAL	*Rhododendron albiflorum*	Cascade azalea	RHAL2	*Rhododendron albiflorum* Hook.
RHMA	*Rhododendron macrophyllum*	Pacific rhododendron	RHMA3	*Rhododendron macrophyllum* D. Don ex G. Don
RIMO	*Ribes montigenum*	Gooseberry currant	RIMO2	*Ribes montigenum* McClatchie

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
RIVI	*Ribes viscosissimum*	Sticky currant	RIVI3	*Ribes viscosissimum* Pursh
RIMO2	*Ribes mogollonicum*	Wolf's currant	RIWO	*Ribes wolfii* Rothrock
SALA2	*Salix lasiandra*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALA	*Sagittaria latifolia*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALA2	*Salix lasiandra*	Shining willow	SALU	*Salix lucida* Muhl.
SALU	*Salix lutea*	Yellow willow	SALU2	*Salix lutea* Nutt.
SAEX	*Salix exigua*	Dusky willow	SAME2	*Salix melanopsis* Nutt.
SAAR4	*Saxifraga arguta*	Brook saxifrage	SAOD5	*Saxifraga odontoloma* Piper
SCAN	*Scutellaria angustifolia*	Narrowlead skullcap	SCAN3	*Scutellaria angustifolia* Pursh
SCMI	*Scirpus microcarpus*	Panicled bulrush	SCMI2	*Scirpus microcarpus* J. & K. Presl
SPBE	*Spiraea betulifolia*	White spirea	SPBE2	*Spiraea betulifolia* Pallas
SPDE	*Spiraea densiflora* Nutt. ex Greenm.	Mountain spirea	SPSPS	*Spiraea splendens* var. *splendens* Baumann ex K. Koch
STAM	*Streptopus amplexifolius*	Claspleaf twistedstalk	STAM2	*Streptopus amplexifolius* (L.) DC.
STCO4	*Stachys cooleyae*	Great hedgenettle	STCI2	*Stachys ciliata* Epling
STCO2	*Stipa comata*	Needle and thread	STCO4	*Stipa comata* Trin. & Rupr.
STCO	*Stipa columbiana*	Dore's needlegrass	STNED	*Stipa nelsonii* ssp. *Dorei* Barkworth & Maze
STOC2	*Stenanthium occidentale*	Western stenanthium	STOC	*Stenanthium occidentale* Gray
STOC	*Stipa occidentalis*	Western needlegrass	STOC2	*Stipa occidentalis* Thurb. ex S. Watts
STRO	*Streptopus roseus*	Rosy twistedstalk	STRO4	*Streptopus roseus* Michx.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
HAST	*Haplopappus stenophyllus* Gray	Narrowleaf goldenweed	STST5	*Stenotus stenophyllus* (Gray) Greene
STTH	*Stipa thurberiana*	Thurber's needlegrass	STTH2	*Stipa thurberiana* Piper
SYMO	*Symphoricarpos mollis*	Trailing snowberry	SYHE	*Symphoricarpos hesperius* G.N. Jones
SYOR	*Symphoricarpos oreophilus*	Whorteleaf snowberry	SYOR2	*Symphoricarpos oreophilus* Gray
TABR	*Taxus brevifolia*	Pacific yew	TABR2	*Taxus brevifolia* Nutt.
TIUN	*Tiarella unifoliata*	Oneleaf foamflower	TITRU	*Tiarella trifoliata* var. *unifoliata* (Hook.) Kurtz
TRLA2	*Trientalis latifolia*	Broadleaf starflower	TRBOL	*Trientalis borealis* ssp. *latifolia* (Hook.) Hulten
TRCA3	*Trautvetteria caroliniensis*	Carolina bugbane	TRCA	*Trautvetteria caroliniensis* (Walt.) Vail
TRCE	*Trisetum cernuum*	Nodding oatgrass	TRCE2	*Trisetum cernuum* Trin.
TRCA	*Trisetum canescens*	Tall oatgrass	TRCEC	*Trisetum cernuum* var. *canescens* (Buckl.) Beal
VACA	*Vaccinium caespitosum*	Dwarf blueberry	VACE	*Vaccinium cespitosum* Michx.
VAGL	*Vaccinium globulare* Rydb.	Blue huckleberry	VAME	*Vaccinium membranaceum* Doug. ex Torr.
VAMY	*Vaccinium myrtillus*	Whortleberry	VAMY2	*Vaccinium myrtillus* L.
VAOC	*Valeriana occidentalis*	Western valerian	VAOC2	*Valeriana occidentalis* Heller
VAAL	*Vaccinium alaskense* T.J. Howell	Ovalleaf blueberry	VAOV	*Vaccinium ovalifolium* Sm.
VAOC2	*Vaccinium occidentale*	Bog blueberry	VAUL	*Vaccinium uliginosum* L.
VECA2	*Veronica catenata*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VEAN	*Veronica anagallis-aquatica*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VECA	*Veratrum californicum*	California false hellebore	VECA2	*Veratrum californicum* Dur.

Sort 4: Plants Scientific Name

The following list is in alphabetical order by plants scientific name (fifth column).

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
BROMUS	*Bromus* spp.	Bromegrass		
CAREX	*Carex* spp.	Sedges		
HULSEA	*Hulsea* spp.	Hulsea		
LOM	*Lomatium* spp.	Biscuitroot		
LUP	*Lupinus* spp.	Lupines		
LUPI	*Lupinus* spp.	Lupines		
LUZULA	*Luzula* spp.	Woodrush		
OXALIS	*Oxalis* spp.	Oxalis		
PENST	*Penstemon* spp.	Penstemon		
ROSA	*Rosa* spp.	Rose		
SALIX	*Salix* spp.	Willow		
SCIRPUS	*Scirpus* spp.	Bullrush		
SCORIA	*Scoria* derived soil	Scoria		
SPIRAEA	*Spiraea* spp.	Spirea		
STIPA	*Stipa* spp.	Needlegrass		
STREP	*Streptopus* spp.			
SYMPH	*Symphoricarpos* spp.	Snowberry		
TALUS	*Talus slopes*			
VACCI	*Vaccinium* spp.	Huckleberries		

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
VERAT	*Veratrum* spp.	False hellebore		
ABLA2	*Abies lasiocarpa* A. Murray bis	Subalpine fir	ABBI2	*Abies bifolia* A. Murray bis only for the Blue and Wallowa Mountains and the Colville NF
ABMAS	*Abies magnifica* var. *shastensis* Lemmon	Shasta red fir	ABSH	*Abies X shastensis* (Lemmon) Lemmon
ACGLD	*Acer glabrum douglasii*	Douglas maple	ACGLD4	*Acer glabrum* var. *douglasii* (Hook.) Dippel
AGCR	*Agropyron cristatum*	Desert wheatgrass	AGDE2	*Agropyron desertorum* (Fisch. ex Linlc.) J.A. Schultes
ALPA2	*Allium parvum*	Small onion	ALPA3	*Allium parvum* Kellogg
ALSI	*Alnus sinuata*	Sitka alder	ALVIS	*Alnus viridis* ssp. *sinuate* (Regel) A.& D. Love
ALIN	*Alnus incana*	Mountain alder	ALIN2	*Alnus incana* (L.) Moench
ALRH	*Alnus rhombifolia*	White alder	ALRH2	*Alnus rhombifolia* Nutt.
ALTE	*Alnus tenuifolia*	Thinleaf alder	ALINT	*Alnus incana* ssp. *tenuifolia*
AMAL2	*Amaranthus albus*	Prostrate pigweed	AMAL	*Amaranthus albus* L.
AMAL	*Amelanchier alnifolia*	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roemer
ARTH2	*Arabis thaliana* L.	Mouseear cress	ARTH	*Arabidopsis thaliana* (L.) Heynh.
ARNU2	*Arabis nuttalli*	Nuttall's rockcress	ARNU	*Arabis nuttallii* B.L. Robins
ARNU3	*Aralia nudicaulis*	Wild sarsaparilla	ARNU2	*Aralia nudicaulis* L.
ARVI	*Arctostaphylos viscida*	Sticky whiteleaf manzanita	ARVI4	*Arctostaphylos viscida* Parry

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARPA6	*Arctostaphylos parviflora*	Gravel manzanita	ARPA5	*Arctostaphylos X parviflora* T.J. Hoew (Pro. sp.)
ARPA	*Arctostaphylos patula*	Greenleaf manzanita	ARPA6	*Arctostaphylos patula* Greene
ARCO2	*Arenaria congesta*	Ballhead sandwort	ARCO5	*Arenaria congesta* Nutt.
ARLO3	*Aristida longiseta* Steud.	Fendler threeawn	ARPUL	*Aristida purpurea* var. *longiseta* (Steud.) Vasey
ARLO	*Arnica longifolia*	Spearleaf arnica	ARLO6	*Arnica longifolia* D.C. Eat.
ARLA	*Arnica latifolia*	Broadleaf arnica	ARLA8	*Arnica latifolia* Bong.
ARCO	*Arnica cordifolia*	Heartleaf arnica	ARCO9	*Arnica cordifolia* Hook.
ARNO	*Artemisia nova*	Alkali sagebrush	ARARL	*Artemisia arbuscula* ssp. *longiloba* (Osterhout) L. Shultz
ARTRW	*Artemisia tridentata wyomingensis*	Basin big sagebrush	ARTRT	*Artemisia tridentata* ssp. *tridentata* Nutt.
ARTR	*Artemisia tridentata*	Big sagebrush	ARTR2	*Artemisia tridentata* Nutt.
ARPA5	*Artemisia papposa*	Fuzzy sagebrush	ARPA16	*Artemisia papposa* Blake & Cronq.
ARTRVX	*Artemisia tridentata vaseyana*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARRI	*Artemisia rigida*	Stiff sagebrush	ARRI2	*Artemisia rigida* (Nutt.) Gray
ARTRS	*Artemisia tridentata spiciformis*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARCA	*Artemisia cana*	Silver sage	ARCA13	*Artemisia cana* Pursh
ARAR	*Artemisia arbuscula*	Low sagebrush	ARAR8	*Artemisia arbuscula* Nutt.
ARTR2	*Artemisia tripartita*	Threetip sagebrush	ARTR4	*Artemisia tripartita* Rydb.
ASCA3	*Asarum caudatum*	British Columbia wildginger	ASCA2	*Asarum caudatum* Lindl.
ASDE	*Aspidotis densa*	Indian's dream	ASDE6	*Aspidotis densa* (Brack.) Lellinger
ASLE2	*Aster ledophyllus*	Cascade aster	ASLE3	*Aster ledophyllus* (Gray) Gray

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ASMO	*Aster modestus*	Modest aster	ASMO3	*Aster modestus* Lindl.
ASCA2	*Aster campestris*	Meadow aster	ASCA6	*Aster campestris* Nutt.
ASLE	*Astragalus lentiginosus*	Specklepod milkvetch	ASLE8	*Astragalus lentiginosus* Dougl. ex Hook.
ASCU4	*Astragalus cusickii*	Cusick's milkvetch	ASCU5	*Astragalus cusickii* Gray
ASLE3	*Astragalus leibergii*	Leiberg's milkvetch	ASLE5	*Astragalus leibergii* M.E. Jones
BASA	*Balsamorhiza sagittata*	Arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata* (Pursh) Nutt.
BRCA	*Bromus carinatus*	California brome	BRCA5	*Bromus carinatus* Hook. & Arn.
CACA	*Calamagrostis canadensis*	Bluejoint	CACA4	*Calamagrostis canadensis* (Michx.) Beauv.
CALA3	*Carex lanuginosa*	Knotroot reedgrass	CALA3	*Calamagrostis laxtea* Beal
CANE	*Calamagrostis neglecta*	Slimstem reedgrass	CASTS5	*Calamagrostis stricta* ssp. *stricta* var. *stricta* (Timm) Koel.
CADE3	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADE	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CABI	*Caltha biflora*	Howell's marshmarigold	CALEH2	*Caltha leptosepala* ssp. *Howellii* (Huth) P.G. Sm.
CACU	*Camassia cusickii*	Cusick's camas	CACU2	*Camassia cusickii* S. Wats
CANU5	*Carduus nutans*	Nodding plumeless thistle	CANU4	*Carduus nutans* L.
CARO	*Carex rossii*	Ross' sedge	CARO5	*Carex rossii* Boott
CALE5	*Carex lenticularis*	Tufted sedge	CALE8	*Carex lenticularis* Michx.
CALA4	*Carex lasiocarpa*	Woollyfruit sedge	CALA11	*Carex lasiocarpa* Ehrh.
CANO	*Carex nova*	Black sedge	CANO3	*Carex nova* Bailey
CANU4	*Carex nudata*	Naked sedge	CANU5	*Carex nudata* W. Boott

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CALA3	*Carex lanuginosa*	Woolly sedge	CALA30	*Carex lanuginosa* Michx.
CAGE	*Carex geyeri*	Elk sedge	CAGE2	*Carex geyeri* Boott
CAEU	*Carex eurycarpa*	Widefruit sedge	CAAN15	*Carex angustata* Boott
CALE8	*Carex leptalea*	Bristly stalked sedge	CALE10	*Carex leptalea* Wahlenb.
CARO2	*Carex rostrata*	Beaked sedge	CARO6	*Carex rostrata* Stokes
CASC	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CAHO	*Carex hoodii*	Hood's sedge	CAHO5	*Carex hoodii* Boott
CASI3	*Carex sitchensis* Prescott ex Bong.	Sitka sedge	CAAQD	*Carex aquatilis* var. *dives* (Holm) Kukenth.
CAVE	*Carex vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CAVEV	*Carex vesicaria* var. *vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CAIN3	*Carex interrupta*	Greenfruit sedge	CAIN17	*Carex interrupta* Boeckl.
CAPE	*Carex pennsylvanica*	Longstolen sedge	CAIN9	*Carex inops* Bailey
CADI	*Carex disperma*	Softleaf sedge	CADI6	*Carex disperma* Dewey
CAAM	*Carex amplifolia*	Bigleaf sedge	CAAM10	*Carex amplifolia* Boott
CASC5	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
CADE	*Carex deweyana*	Taperfruit shortscale sedge	CALE24	*Carex leptopoda* Mackenzie
CACU2	*Carex cusickii*	Cusick's sedge	CACU5	*Carex cusickii* Mackenzie ex Piper & Beattie
CACA4	*Carex canescens*	Silvery sedge	CACA11	*Carex canescens* L.
CABR	*Carex breweri*	Brewer's sedge	CABR12	*Carex breweri* Boott
CAME	*Cassiope mertensiana*	Western moss heather	CAME7	*Cassiope mertensiana* (Bong.) D. Don
CACH	*Castanopsis chrysophylla*	Golden chinkapin	CACH6	*Castanopsis chrysophylla* (Dougl. ex Hook.) A. DC.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CERE2	*Celtis reticulata* Torr.	Netleaf hackberry	CELAR	*Celtis laevigata* var. *reticulata* (Torr.) L. Benson
CELE	*Cercocarpus ledifolius*	Curlleaf mountain-mahogany	CELE3	*Cercocarpus ledifolius* Nutt.
CHVI	*Chrysothamnus viscidiflorus*	Green rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus* (Hook.) Nutt.
MOSI	*Montia sibirica*	Siberian springbeauty	CLSIS	*Claytonia sibirica* var. *sibirica*
CLUN	*Clintonia uniflora*	Bride's bonnet	CLUN2	*Clintonia uniflora* (Menzies ex J.A. & J.H. Schultes) Kunth
COOC2	*Coptis occidentalis*	Oregon goldthread	COLA3	*Coptis laciniata* Gray
COST	*Cornus stolonitera*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
COOC	*Cornus occidentalis*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
CONU	*Cornus nuttallii*	Pacific dogwood	CONU4	*Cornus nuttallii* Audubon ex Torr. & Gray
COCA	*Cornus canadensis*	Bunchberry dogwood	COCA13	*Cornus canadensis* L.
COCO	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
COCO2	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
CRDO	*Crataegus douglasii*	Black hawthorn	CRDO2	*Crataegus douglasii* Lindl.
DIHO	*Disporum hookeri*	Drops of gold	DIHO3	*Disporum hookeri* (Torr.) Nichols.
DIST	*Distichlis stricta*	Inland saltgrass	DISP	*Distichlis spicata* (L.) Greene
ELPA2	*Eleocharis paucifloria*	Fewflower spikerush	ELQU2	*Eleocharis quinqueflora* (F.X. Hartmann) Schwartz
ELPA	*Eleocharis palustris*	Common spikerush	ELPA3	*Eleocharis palustris* (L.) Roemer & J.A. Schultes
ELPA3	*Eleocharis parvula*	Dwarf spikerush	ELPA5	*Eleocharis parvula* (Roemer & J.A. Schultes) Link ex Bluff, Nees & Schauer
CLPY	*Cladothamnus pyroliflorus*	Copperbrush	ELPY	*Elliottia pyroliflorus* (Bong.) S.W. Brim & P.F. Stevens

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
SIHY	*Sitanion hystrix* (Nutt.) J.G. Sm.	Bottlebrush squirreltail	ELEL5	Elymus elymoides (Rat.) Swezey
ERPE3	*Eragrostis pectinacea*	Tufted lovegrass	ERPE	*Eragrostis pectinacea* (Michx.) Nees ex Steud.
ERSP4	*Eriastrum sparsiflorum*	Great Basin woolstar	ERSP3	*Eriastrum sparsiflorum* (Eastw.) Mason
ERPU	*Erigeron pumilus*	Shaggy fleabane	ERPU2	*Erigeron pumilus* Nutt.
ERPE	*Erigeron peregrinus*	Subalpine fleabane	ERPE3	*Erigeron peregrinus* (Banks ex Pursh) Greene
ERSP	*Erigeron speciosus*	Aspen fleabane	ERSP4	*Erigeron speciosus* (Lindl.) D.C.
ERCO4	*Erigeron coulteri*	Large mountain fleabane	ERCO6	*Erigeron coulteri* Porter
ERCO	*Erigeron compositus*	Cutleaf daisy	ERCO4	*Erigeron compositus* Pursh
ERNI	*Eriogonum niveum*	Snow buckwheat	ERNI2	*Eriogonum niveum* Dougl. ex Benth.
ERSP3	*Erigonum sphaerocephalum*	Rock buckwheat	ERSP7	*Eriogonum sphaerocephalum* Dougl. ex Benth.
ERHE	*Eriogonum heracleoides*	Parsnipflower buckwheat	ERHE2	*Eriogonum heracleoides* Nutt.
ERST2	*Eriogonum strictum*	Blue Mountain buckwheat	ERST4	*Eriogonum strictum* Benth.
ERTH	*Eriogonum thymoides*	Thymeleaf buckwheat	ERTH4	*Eriogonum thymoides* Benth.
ERLA	*Eriophyllum lanatum*	Woolly eriophyllum	ERLA6	*Eriophyllum lanatum* (Pursh) Forbes
ERHE2	*Erythronium hendersonii*	Henderson's fawnlily	ERHE7	*Erythromium hendersonii* S. Wats.
ERMO	*Erythronium montanum*	White avalanchelily	ERMO8	*Erythronium montanum* S. Wats.
FERU	*Festuca rubra*	Red fescue	FERU2	*Festuca rubra* L.
RHPU	*Rhamnus purshiana*	Pursh's buckthorn	FRPU7	*Frangula purshiana* (DC.) Cooper
GATR	*Galium triflorum*	Fragrant bedstraw	GATR3	*Galium triflorum* Michx.
GATR2	*Galium tricornatum*	Roughfruit corn bedstraw	GATR6	*Galium tricornutum* Dandy

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
GATR3	*Galium trifidum*	Threepetal bedstraw	GATR2	*Galium trifidum* L.
GLNE	*Glossopetalon nevadense*	Spiny greasebush	GLSPA	*Glossopetalon spinescens* var. *Adrdum* M.E. Jones
GYDR	*Gymnocarpium dryopteris*	Pacific oakfern	GYDI2	*Gymnocarpium disjunctum* (Rupr.) Sarvela
HELA	*Heracleum lanatum*	Mountain sunflower	HELA	*Helianthus X laetifloris* Pers. (Pro sp.)
HELA	*Heracleum lanatum*	Common cowparsnip	HEMA80	*Heracleum maximum* Bartr.
HODU	*Holodiscus dumosus*	Oceanspray	HODI	*Holodiscus discolor* (Pursh) Maxim.
JUBA2	*Juncus balticus*	Baltic rush	JUBA	*Juncus balticus* Willd. (Suksdorf) C.L. Hitchc.
JUCO4	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
JUCO	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
KOCR	*Koeleria cristata*	Prairie Junegrass	KOMA	*Koeleria macrantha* (Leded.) J.A. Schultes
EULA	*Eurotia lanata*	Winterfat	KRLA2	*Krascheninnikovia lanata* (Pursh) Guldenstaedt
LALA3	*Lathyrus latifolius*	Perennial peavine	LALA4	*Lathyrus latifolius* L.
LALA2	*Lathyrus lanszwertii*	Thickleaf peavine	LALA3	*Lathyrus lanszwertii* Kellogg
ELCI	*Elymus cinereus*	Basin wildrye	LECI4	*Leymus cinereus* (Scribn. & Merr.) A. Love
LIBO3	*Lilium bolanderi*	Bolander's lily	LIBO	*Lilium bolanderi* S. Wats
LIBO2	*Linnaea borealis*	Bolander's deserttrumpets	LIBO2	*Linanthus bolanderi* (Gray) Greene
LINU	*Linanthastrum nuttallii*	Nuttall's deserttrumpets	LINUN	*Linanthus nuttallii* ssp. *nuttalli* (Gray) Greene ex Milliken
LIBO	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO2	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
LULA2	*Lupinus laxiflorus*	Spur lupine	LUARL5	*Lipinus argenteus* ssp. *argenteus* var. *laxiflorus* (Dougl. ex Lindl.) Dorn
LIBO	*Listera borealis*	Northern tway blade	LIBO4	*Listera borealis* Marong.
LOMA	*Lomatium macrocarpum*	Seaside lobularia	LOMA	*Lobularia maritima* (L.) Desv.
LOMA	*Lomatium macrocarpum*	Bigseed biscuitroot	LOMA3	*Lomatium macrocarpum* (Nutt. ex Torr. & Gray) Coult. & Rose
LUSE	*Lupinus sericeus*	Creeping silverback	LUSE	*Luina serpentina* Cronq.
LUSE	*Lupinus sericeus*	Silky lupine	LUSE4	*Lupinus sericeus* Pursh
LULA	*Lupinus latifolius*	Broadleaf lupine	LULA4	*Lupinus latifolius* Lindl. ex J.G. Agardh
LUHI	*Luzula hitchcockii*	Hitchcock's smooth woodrush	LUGLH	*Luzula glabrata* var. *hitchcockii* (Hamet-Ahti) Dorn
LYAM	*Lysichitum americanus*	American waterhorehound	LYAM	*Lycopus americanus* Muhl. ex W. Bart.
LYAM	*Lysichitum americanus*	American skunkcabbage	LYAM3	*Lysichiton americanus* Hulten & St. John
ASLE5	*Aster leiodes*	Cutleaf goldenweed	MACAC3	*Machaeranthera canescens* ssp. *canescens* var. *canescens* (Pursh) Gray
MADI	*Madia dissitiflora*	Grassy tarweed	MAGR3	*Madia gracilis* (Sm.) Keck & J. Clausen ex Applegate
BERE	*Berberis repens* Lindl.	Oregongrape	MARE11	*Mahonia repens* (Lindl.) G. Don
BENE	*Berberis nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
MANE	*Mahonia nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
BEAQ	*Berberis aquifolium* Pursh	Hollyleaved barberry	MAAQ2	*Mahonia aquifolium* (Pursh) Nutt.
MADI2	*Maianthemum dilatatum*	Twoleaf false Solomon's seal	MADI	*Maianthemum dilatatum* (Wood) A. Nels. & J.F. Macbr.
SMST	*Smilacina stellata* (L.) Desf.	Starry false Solomon's seal	MAST4	*Maianthemum stellatum* (L.) Link
MANE2	*Malva neglecta*	Common mallow	MANE	*Malva neglecta* Wallr.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARNU	*Arenaria nuttalli*	Nuttall's sandwort	MINUN2	*Minuartia nuttallii* ssp. *nuttallii* (Pax.) Briq.
PYSE	*Pyrola secunda* L.	Sidebells wintergreen	ORSE	*Orthilia secunda* (L.) House
OSCH	*Osmorhiza chilensis*	Sweetcicely	OSBE	*Osmorhiza berteroi* DC.
PAMY	*Pachistima myrsinites*	Boxleaf myrtle	PAMY	*Paxistima myrsinites* (Pursh) Raf.
PERA3	*Peraphyllum ramosissimum*	Rattan's beardtongue	PERA3	*Penstemon rattanii* Gray
PELA	*Penstemon laetus*	Mountain blue penstemon	PELA7	*Penstemon laetus* Gray
POFR	*Potentilla fruticosa*	Shrubby cinquefoil	PEFL15	*Pentaphyloides floribunda* (Pursh) A.Love
PERA3	*Peraphyllum ramosissimum*	Squaw apple	PERA4	*Peraphyllum ramosissimum* Nutt.
PEFR2	*Petasites frigidus*	Arctic sweet coltsfoot	PEFR5	*Petasites frigidus* (L.) Fries
PHHE	*Phacelia heterophylla*	Varileaf phacelia	PHHE2	*Phacelia heterophylla* Pursh
PHLE2	*Philadelphus lewisii*	Lewis' mockorange	PHLE4	*Phildelphus lewisii* Pursh
PHCO2	*Phlox colubrina*	Snake River phlox	PHCO10	*Phlox colubrina* Wherry & Constance
PHHE2	*Phlox hendersonii*	Henderson's phlox	PHHE9	*Phlox hendersonii* (E. Nels.) Cronq.
PHOR	*Physaria oregana*	Oregon twinpod	PHOR2	*Physaria oregona* S. Wats.
PHCA3	*Physocarpus capitatus*	Pacific ninebark	PHCA11	*Physocarpus capitatus* (Pursh) Kuntze
PHMA	*Physocarpus malvaceus*	Mallow ninebark	PHMA5	*Physocarpus malvaceus* (Greene) Kuntze
POSA3	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POSA	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
PONE5	*Poa nemoralis*	Wood bluegrass	PONE	*Poa nemoralis* L.
PONE2	*Poa nevadensis*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
PONE	*Poa nervosa*	Wheeler bluegrass	PONE2	*Poa nervosa* (Hook.) Vasey

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
POCU	*Poa cusickii*	Skyline bluegrass	POFEF	*Poa fendleriana* ssp. *Fendleriana* (Steud.) Vasey
POPU	*Polemonium pulcherrimum*	Skunkleaf polemonium	POPU3	*Polemonium pulcherrimum* Hook.
PONE4	*Polygonum newberri*	Newberry's knotweed	PONE5	*Polygonum newberry* Small
POTR2	*Populus trichocarpa*	Black cottonwood	POBAT	*Populus balsamifera* ssp. *trichocarpa* (Torr. & Gray ex Hook.) Brayshaw
POTR	*Populus tremuloides*	Quaking aspen	POTR5	*Populus tremuloides* Michx.
POPU3	*Potentilla pulcherrima*	Beautiful cinquefoil	POPU4	*Potentilla pulcherrima* Lehm.
AGIN	*Agropyron inermis*	Beardless wheatgrass	PSSPI	*Pseudoroegneria spicata* ssp. *inermis* (Scribr. & J.G. Sm.) A. Love
AGSP	*Agropyron spicatum* Pursh	Bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata* (Pursh) A. Love
STJA	*Stellaria jamesiana*	Tuber starwort	PSJA2	*Pseudostellaria jamesiana* (Torr.) W.A. Weber & R.L. Hartman
PUTR	*Purshia tridentata*	Antelope bitterbrush	PUTR2	*Purshia tridentata* (Pursh) DC.
QUGA	*Quercus garryana*	Oregon white oak	QUGA4	*Quercus garryana* Dougl. ex Hook.
QUSA	*Quercus sadleriana*	Deer oak	QUSA2	*Quercus sadleriana* R. Br. Campst.
RHAL	*Rhododendron albiflorum*	Alderleaf buckthorn	RHAL	*Rhamnus alnifolia* L.Her.
RHAL	*Rhododendron albiflorum*	Cascade azalea	RHAL2	*Rhododendron albiflorum* Hook.
RHMA	*Rhododendron macrophyllum*	Pacific rhododendron	RHMA3	*Rhododendron macrophyllum* D. Don ex G. Don
RIMO2	*Ribes mogollonicum*	Wolf's currant	RIWO	*Ribes wolfii* Rothrock
RIVI	*Ribes viscosissimum*	Sticky currant	RIVI3	*Ribes viscosissimum* Pursh
RIMO	*Ribes montigenum*	Gooseberry currant	RIMO2	*Ribes montigenum* McClatchie
SALA	*Sagittaria latifolia*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
SALA2	*Salix lasiandra*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALU	*Salix lutea*	Yellow willow	SALU2	*Salix lutea* Nutt.
SAEX	*Salix exigua*	Dusky willow	SAME2	*Salix melanopsis* Nutt.
SALA2	*Salix lasiandra*	Shining willow	SALU	*Salix lucida* Muhl.
SAAR4	*Saxifraga arguta*	Brook saxifrage	SAOD5	*Saxifraga odontoloma* Piper
SCMI	*Scirpus microcarpus*	Panicled bulrush	SCMI2	*Scirpus microcarpus* J. & K. Presl
SCAN	*Scutellaria angustifolia*	Narrowlead skullcap	SCAN3	*Scutellaria angustifolia* Pursh
SPBE	*Spiraea betulifolia*	White spirea	SPBE2	*Spiraea betulifolia* Pallas
SPDE	*Spiraea densiflora* Nutt. ex Greenm.	Mountain spirea	SPSPS	*Spiraea splendens* var. *splendens* Baumann ex K. Koch
STCO4	*Stachys cooleyae*	Great hedgenettle	STCI2	*Stachys ciliata* Epling
STOC2	*Stenanthium occidentale*	Western stenanthium	STOC	*Stenanthium occidentale* Gray
HAST	*Haplopappus stenophyllus* Gray	Narrowleaf goldenweed	STST5	*Stenotus stenophyllus* (Gray) Greene
STTH	*Stipa thurberiana*	Thurber's needlegrass	STTH2	*Stipa thurberiana* Piper
STCO2	*Stipa comata*	Needle and thread	STCO4	*Stipa comata* Trin. & Rupr.
STOC	*Stipa occidentalis*	Western needlegrass	STOC2	*Stipa occidentalis* Thurb. ex S. Watts
STCO	*Stipa columbiana*	Dore's needlegrass	STNED	*Stipa nelsonii* ssp. *Dorei* Barkworth & Maze
STAM	*Streptopus amplexifolius*	Claspleaf twistedstalk	STAM2	*Streptopus amplexifolius* (L.) DC.
STRO	*Streptopus roseus*	Rosy twistedstalk	STRO4	*Streptopus roseus* Michx.
SYMO	*Symphoricarpos mollis*	Trailing snowberry	SYHE	*Symphoricarpos hesperius* G.N. Jones
SYOR	*Symphoricarpos oreophilus*	Whorteleaf snowberry	SYOR2	*Symphoricarpos oreophilus* Gray

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
TABR	*Taxus brevifolia*	Pacific yew	TABR2	*Taxus brevifolia* Nutt.
TIUN	*Tiarella unifoliata*	Oneleaf foamflower	TITRU	*Tiarella trifoliata* var. *unifoliata* (Hook.) Kurtz
TRCA3	*Trautvetteria caroliniensis*	Carolina bugbane	TRCA	*Trautvetteria caroliniensis* (Walt.) Vail
TRLA2	*Trientalis latifolia*	Broadleaf starflower	TRBOL	*Trientalis borealis* ssp. *latifolia* (Hook.) Hulten
TRCE	*Trisetum cernuum*	Nodding oatgrass	TRCE2	*Trisetum cernuum* Trin.
TRCA	*Trisetum canescens*	Tall oatgrass	TRCEC	*Trisetum cernuum* var. *canescens* (Buckl.) Beal
VAGL	*Vaccinium globulare* Rydb.	Blue huckleberry	VAME	*Vaccinium membranaceum* Doug. ex Torr.
VAAL	*Vaccinium alaskense* T.J. Howell	Ovalleaf blueberry	VAOV	*Vaccinium ovalifolium* Sm.
VACA	*Vaccinium caespitosum*	Dwarf blueberry	VACE	*Vaccinium cespitosum* Michx.
VAOC2	*Vaccinium occidentale*	Bog blueberry	VAUL	*Vaccinium uliginosum* L.
VAMY	*Vaccinium myrtillus*	Whortleberry	VAMY2	*Vaccinium myrtillus* L.
VAOC	*Valeriana occidentalis*	Western valerian	VAOC2	*Valeriana occidentalis* Heller
VECA	*Veratrum californicum*	California false hellebore	VECA2	*Veratrum californicum* Dur.
VECA2	*Veronica catenata*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VEAN	*Veronica anagallis-aquatica*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*

Sort 5: Common Name

The following list is in alphabetical order by the common name (third column).

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
STREP	*Streptopus* spp.			
TALUS	*Talus slopes*			
RHAL	*Rhododendron albiflorum*	Alderleaf buckthorn	RHAL	*Rhamnus alnifolia* L.Her.
ARNO	*Artemisia nova*	Alkali sagebrush	ARARL	*Artemisia arbuscula* ssp. *longiloba* (Osterhout) L. Shultz
LYAM	*Lysichitum americanus*	American skunkcabbage	LYAM3	*Lysichiton americanus* Hulten & St. John
LYAM	*Lysichitum americanus*	American waterhorehound	LYAM	*Lycopus americanus* Muhl. ex W. Bart.
PUTR	*Purshia tridentata*	Antelope bitterbrush	PUTR2	*Purshia tridentata* (Pursh) DC.
PEFR2	*Petasites frigidus*	Arctic sweet coltsfoot	PEFR5	*Petasites frigidus* (L.) Fries
BASA	*Balsamorhiza sagittata*	Arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata* (Pursh) Nutt.
ERSP	*Erigeron speciosus*	Aspen fleabane	ERSP4	*Erigeron speciosus* (Lindl.) D.C.
ARCO2	*Arenaria congesta*	Ballhead sandwort	ARCO5	*Arenaria congesta* Nutt.
JUBA2	*Juncus balticus*	Baltic rush	JUBA	*Juncus balticus* Willd. (Suksdorf) C.L. Hitchc.
ARTRW	*Artemisia tridentata wyomingensis*	Basin big sagebrush	ARTRT	*Artemisia tridentata* ssp. *tridentata* Nutt.
ELCI	*Elymus cinereus*	Basin wildrye	LECI4	*Leymus cinereus* (Scribn. & Merr.) A. Love
CARO2	*Carex rostrata*	Beaked sedge	CARO6	*Carex rostrata* Stokes
COCO2	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
COCO	*Corylus cornuta*	Beaked hazelnut	COCO6	*Corylus cornuta* Marsh.
AGIN	*Agropyron inermis*	Beardless wheatgrass	PSSPI	*Pseudoroegneria spicata* ssp. *inermis* (Scribr. & J.G. Sm.) A. Love
POPU3	*Potentilla pulcherrima*	Beautiful cinquefoil	POPU4	*Potentilla pulcherrima* Lehm.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARTR	*Artemisia tridentata*	Big sagebrush	ARTR2	*Artemisia tridentata* Nutt.
CAAM	*Carex amplifolia*	Bigleaf sedge	CAAM10	*Carex amplifolia* Boott
LOMA	*Lomatium macrocarpum*	Bigseed biscuitroot	LOMA3	*Lomatium macrocarpum* (Nutt. ex Torr. & Gray) Coult. & Rose
LOM	*Lomatium* spp.	Biscuitroot		
POTR2	*Populus trichocarpa*	Black cottonwood	POBAT	*Populus balsamifera* ssp. *trichocarpa* (Torr. & Gray ex Hook.) Brayshaw
CRDO	*Crataegus douglasii*	Black hawthorn	CRDO2	*Crataegus douglasii* Lindl.
CANO	*Carex nova*	Black sedge	CANO3	*Carex nova* Bailey
CAVE	*Carex vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
CAVEV	*Carex vesicaria* var. *vesicaria*	Blister sedge	CAVE6	*Carex vesicaria* L.
ERST2	*Eriogonum strictum*	Blue Mountain buckwheat	ERST4	*Eriogonum strictum* Benth.
VAGL	*Vaccinium globulare* Rydb.	Blue huckleberry	VAME	*Vaccinium membranaceum* Doug. ex Torr.
AGSP	*Agropyron spicatum* Pursh	Bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata* (Pursh) A. Love
CACA	*Calamagrostis canadensis*	Bluejoint	CACA4	*Calamagrostis canadensis* (Michx.) Beauv.
VAOC2	*Vaccinium occidentale*	Bog blueberry	VAUL	*Vaccinium uliginosum* L.
LIBO3	*Lilium bolanderi*	Bolander's lily	LIBO	*Lilium bolanderi* S. Wats
LIBO2	*Linnaea borealis*	Bolander's deserttrumpets	LIBO2	*Linanthus bolanderi* (Gray) Greene
SIHY	*Sitanion hystrix* (Nutt.) J.G. Sm.	Bottlebrush squirreltail	ELEL5	Elymus elymoides (Rat.) Swezey
PAMY	*Pachistima myrsinites*	Boxleaf myrtle	PAMY	*Paxistima myrsinites* (Pursh) Raf.
CABR	*Carex breweri*	Brewer's sedge	CABR12	*Carex breweri* Boott

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CLUN	*Clintonia uniflora*	Bride's bonnet	CLUN2	*Clintonia uniflora* (Menzies ex J.A. & J.H. Schultes) Kunth
CALE8	*Carex leptalea*	Bristly stalked sedge	CALE10	*Carex leptalea* Wahlenb.
ASCA3	*Asarum caudatum*	British Columbia wildginger	ASCA2	*Asarum caudatum* Lindl.
ARLA	*Arnica latifolia*	Broadleaf arnica	ARLA8	*Arnica latifolia* Bong.
LULA	*Lupinus latifolius*	Broadleaf lupine	LULA4	*Lupinus latifolius* Lindl. ex J.G. Agardh
SALA2	*Salix lasiandra*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
SALA	*Sagittaria latifolia*	Broadleaf arrowhead	SALA2	*Sagittaria latifolia* Wild.
TRLA2	*Trientalis latifolia*	Broadleaf starflower	TRBOL	*Trientalis borealis* ssp. *latifolia* (Hook.) Hulten
BROMUS	*Bromus* spp.	Bromegrass		
SAAR4	*Saxifraga arguta*	Brook saxifrage	SAOD5	*Saxifraga odontoloma* Piper
SCIRPUS	*Scirpus* spp.	Bullrush		
COCA	*Cornus canadensis*	Bunchberry dogwood	COCA13	*Cornus canadensis* L.
BRCA	*Bromus carinatus*	California brome	BRCA5	*Bromus carinatus* Hook. & Arn.
VECA	*Veratrum californicum*	California false hellebore	VECA2	*Veratrum californicum* Dur.
TRCA3	*Trautvetteria caroliniensis*	Carolina bugbane	TRCA	*Trautvetteria caroliniensis* (Walt.) Vail
BENE	*Berberis nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
RHAL	*Rhododendron albiflorum*	Cascade azalea	RHAL2	*Rhododendron albiflorum* Hook.
MANE	*Mahonia nervosa*	Cascade Oregongrape	MANE2	*Mahonia nervosa* (Pursh) Nutt.
ASLE2	*Aster ledophyllus*	Cascade aster	ASLE3	*Aster ledophyllus* (Gray) Gray
STAM	*Streptopus amplexifolius*	Claspleaf twistedstalk	STAM2	*Streptopus amplexifolius* (L.) DC.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
JUCO	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
ELPA	*Eleocharis palustris*	Common spikerush	ELPA3	*Eleocharis palustris* (L.) Roemer & J.A. Schultes
JUCO4	*Juniperus communis*	Common juniper	JUCO6	*Juniperus communis* L.
HELA	*Heracleum lanatum*	Common cowparsnip	HEMA80	*Heracleum maximum* Bartr.
MANE2	*Malva neglecta*	Common mallow	MANE	*Malva neglecta* Wallr.
CLPY	*Cladothamnus pyroliflorus*	Copperbrush	ELPY	*Elliottia pyroliflorus* (Bong.) S.W. Brim & P.F. Stevens
LUSE	*Lupinus sericeus*	Creeping silverback	LUSE	*Luina serpentina* Cronq.
CELE	*Cercocarpus ledifolius*	Curlleaf mountain-mahogany	CELE3	*Cercocarpus ledifolius* Nutt.
ASCU4	*Astragalus cusickii*	Cusick's milkvetch	ASCU5	*Astragalus cusickii* Gray
CACU	*Camassia cusickii*	Cusick's camas	CACU2	*Camassia cusickii* S. Wats
CACU2	*Carex cusickii*	Cusick's sedge	CACU5	*Carex cusickii* Mackenzie ex Piper & Beattie
ASLE5	*Aster leiodes*	Cutleaf goldenweed	MACAC3	*Machaeranthera canescens* ssp. *canescens* var. *canescens* (Pursh) Gray
ERCO	*Erigeron compositus*	Cutleaf daisy	ERCO4	*Erigeron compositus* Pursh
QUSA	*Quercus sadleriana*	Deer oak	QUSA2	*Quercus sadleriana* R. Br. Campst.
AGCR	*Agropyron cristatum*	Desert wheatgrass	AGDE2	*Agropyron desertorum* (Fisch. ex Linlc.) J.A. Schultes
STCO	*Stipa columbiana*	Dore's needlegrass	STNED	*Stipa nelsonii* ssp. *Dorei* Barkworth & Maze
ACGLD	*Acer glabrum douglasii*	Douglas maple	ACGLD4	*Acer glabrum* var. *douglasii* (Hook.) Dippel
DIHO	*Disporum hookeri*	Drops of gold	DIHO3	*Disporum hookeri* (Torr.) Nichols.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
SAEX	*Salix exigua*	Dusky willow	SAME2	*Salix melanopsis* Nutt.
ELPA3	*Eleocharis parvula*	Dwarf spikerush	ELPA5	*Eleocharis parvula* (Roemer & J.A. Schultes) Link ex Bluff, Nees & Schauer
VACA	*Vaccinium caespitosum*	Dwarf blueberry	VACE	*Vaccinium cespitosum* Michx.
CAGE	*Carex geyeri*	Elk sedge	CAGE2	*Carex geyeri* Boott
VERAT	*Veratrum* spp.	False hellebore		
ARLO3	*Aristida longiseta* Steud.	Fendler threeawn	ARPUL	*Aristida purpurea* var. *longiseta* (Steud.) Vasey
ELPA2	*Eleocharis paucifloria*	Fewflower spikerush	ELQU2	*Eleocharis quinqueflora* (F.X. Hartmann) Schwartz
GATR	*Galium triflorum*	Fragrant bedstraw	GATR3	*Galium triflorum* Michx.
ARPA5	*Artemisia papposa*	Fuzzy sagebrush	ARPA16	*Artemisia papposa* Blake & Cronq.
CACH	*Castanopsis chrysophylla*	Golden chinkapin	CACH6	*Castanopsis chrysophylla* (Dougl. ex Hook.) A. DC.
RIMO	*Ribes montigenum*	Gooseberry currant	RIMO2	*Ribes montigenum* McClatchie
MADI	*Madia dissitiflora*	Grassy tarweed	MAGR3	*Madia gracilis* (Sm.) Keck & J. Clausen ex Applegate
ARPA6	*Arctostaphylos parviflora*	Gravel manzanita	ARPA5	*Arctostaphylos X parviflora* T.J. Hoew (Pro. sp.)
STCO4	*Stachys cooleyae*	Great hedgenettle	STCI2	*Stachys ciliata* Epling
ERSP4	*Eriastrum sparsiflorum*	Great Basin woolstar	ERSP3	*Eriastrum sparsiflorum* (Eastw.) Mason
CHVI	*Chrysothamnus viscidiflorus*	Green rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus* (Hook.) Nutt.
CAIN3	*Carex interrupta*	Greenfruit sedge	CAIN17	*Carex interrupta* Boeckl.
ARPA	*Arctostaphylos patula*	Greenleaf manzanita	ARPA6	*Arctostaphylos patula* Greene

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ARCO	*Arnica cordifolia*	Heartleaf arnica	ARCO9	*Arnica cordifolia* Hook.
ERHE2	*Erythronium hendersonii*	Henderson's fawnlily	ERHE7	*Erythromium hendersonii* S. Wats.
PHHE2	*Phlox hendersonii*	Henderson's phlox	PHHE9	*Phlox hendersonii* (E. Nels.) Cronq.
LUHI	*Luzula hitchcockii*	Hitchcock's smooth woodrush	LUGLH	*Luzula glabrata* var. *hitchcockii* (Hamet-Ahti) Dorn
BEAQ	*Berberis aquifolium* Pursh	Hollyleaved barberry	MAAQ2	*Mahonia aquifolium* (Pursh) Nutt.
CAHO	*Carex hoodii*	Hood's sedge	CAHO5	*Carex hoodii* Boott
CABI	*Caltha biflora*	Howell's marshmarigold	CALEH2	*Caltha leptosepala* ssp. *Howellii* (Huth) P.G. Sm.
VACCI	*Vaccinium* spp.	Huckleberries		
HULSEA	*Hulsea* spp.	Hulsea		
CADE	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
CADE3	*Calocedrus decurrens*	Incense-cedar	CADE27	*Calocedrus decurrens* (Torr.) Florin
ASDE	*Aspidotis densa*	Indian's dream	ASDE6	*Aspidotis densa* (Brack.) Lellinger
DIST	*Distichlis stricta*	Inland saltgrass	DISP	*Distichlis spicata* (L.) Greene
CALA3	*Carex lanuginosa*	Knotroot reedgrass	CALA3	*Calamagrostis laxtea* Beal
ERCO4	*Erigeron coulteri*	Large mountain fleabane	ERCO6	*Erigeron coulteri* Porter
ASLE3	*Astragalus leibergii*	Leiberg's milkvetch	ASLE5	*Astragalus leibergii* M.E. Jones
PHLE2	*Philadelphus lewisii*	Lewis' mockorange	PHLE4	*Phildelphus lewisii* Pursh
CAPE	*Carex pennsylvanica*	Longstolen sedge	CAIN9	*Carex inops* Bailey
ARAR	*Artemisia arbuscula*	Low sagebrush	ARAR8	*Artemisia arbuscula* Nutt.
LUPI	*Lupinus* spp.	Lupines		

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
LUP	*Lupinus* spp.	Lupines		
PHMA	*Physocarpus malvaceus*	Mallow ninebark	PHMA5	*Physocarpus malvaceus* (Greene) Kuntze
ASCA2	*Aster campestris*	Meadow aster	ASCA6	*Aster campestris* Nutt.
ASMO	*Aster modestus*	Modest aster	ASMO3	*Aster modestus* Lindl.
HELA	*Heracleum lanatum*	Mountain sunflower	HELA	*Helianthus X laetifloris* Pers. (Pro sp.)
SPDE	*Spiraea densiflora* Nutt. ex Greenm.	Mountain spirea	SPSPS	*Spiraea splendens* var. *splendens* Baumann ex K. Koch
ALIN	*Alnus incana*	Mountain alder	ALIN2	*Alnus incana* (L.) Moench
CASC5	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
PELA	*Penstemon laetus*	Mountain blue penstemon	PELA7	*Penstemon laetus* Gray
ARTRS	*Artemisia tridentata spiciformis*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
ARTRVX	*Artemisia tridentata vaseyana*	Mountain big sagebrush	ARTRV	*Artemisia tridentata* ssp. *vaseyana* (Rydb.) Beetle
CASC	*Carex scopulorum*	Mountain sedge	CASC12	*Carex scopulorum* Holm
ARTH2	*Arabis thaliana* L.	Mouseear cress	ARTH	*Arabidopsis thaliana* (L.) Heynh.
CANU4	*Carex nudata*	Naked sedge	CANU5	*Carex nudata* W. Boott
SCAN	*Scutellaria angustifolia*	Narrowlead skullcap	SCAN3	*Scutellaria angustifolia* Pursh
HAST	*Haplopappus stenophyllus* Gray	Narrowleaf goldenweed	STST5	*Stenotus stenophyllus* (Gray) Greene
STCO2	*Stipa comata*	Needle and thread	STCO4	*Stipa comata* Trin. & Rupr.
STIPA	*Stipa* spp.	Needlegrass		

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CERE2	*Celtis reticulata* Torr.	Netleaf hackberry	CELAR	*Celtis laevigata* var. *reticulata* (Torr.) L. Benson
PONE4	*Polygonum newberri*	Newberry's knotweed	PONE5	*Polygonum newberry* Small
CANU5	*Carduus nutans*	Nodding plumeless thistle	CANU4	*Carduus nutans* L.
TRCE	*Trisetum cernuum*	Nodding oatgrass	TRCE2	*Trisetum cernuum* Trin.
LIBO	*Listera borealis*	Northern tway blade	LIBO4	*Listera borealis* Marong.
ARNU	*Arenaria nuttalli*	Nuttall's sandwort	MINUN2	*Minuartia nuttallii* ssp. *nuttallii* (Pax.) Briq.
LINU	*Linanthastrum nuttallii*	Nuttall's deserttrumpets	LINUN	*Linanthus nuttallii* ssp. *nuttalli* (Gray) Greene ex Milliken
ARNU2	*Arabis nuttalli*	Nuttall's rockcress	ARNU	*Arabis nuttallii* B.L. Robins
HODU	*Holodiscus dumosus*	Oceanspray	HODI	*Holodiscus discolor* (Pursh) Maxim.
TIUN	*Tiarella unifoliata*	Oneleaf foamflower	TITRU	*Tiarella trifoliata* var. *unifoliata* (Hook.) Kurtz
PHOR	*Physaria oregana*	Oregon twinpod	PHOR2	*Physaria oregona* S. Wats.
COOC2	*Coptis occidentalis*	Oregon goldthread	COLA3	*Coptis laciniata* Gray
QUGA	*Quercus garryana*	Oregon white oak	QUGA4	*Quercus garryana* Dougl. ex Hook.
BERE	*Berberis repens* Lindl.	Oregongrape	MARE11	*Mahonia repens* (Lindl.) G. Don
VAAL	*Vaccinium alaskense* T.J. Howell	Ovalleaf blueberry	VAOV	*Vaccinium ovalifolium* Sm.
OXALIS	*Oxalis* spp.	Oxalis		
GYDR	*Gymnocarpium dryopteris*	Pacific oakfern	GYDI2	*Gymnocarpium disjunctum* (Rupr.) Sarvela
RHMA	*Rhododendron macrophyllum*	Pacific rhododendron	RHMA3	*Rhododendron macrophyllum* D. Don ex G. Don
PHCA3	*Physocarpus capitatus*	Pacific ninebark	PHCA11	*Physocarpus capitatus* (Pursh) Kuntze
TABR	*Taxus brevifolia*	Pacific yew	TABR2	*Taxus brevifolia* Nutt.

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CONU	*Cornus nuttallii*	Pacific dogwood	CONU4	*Cornus nuttallii* Audubon ex Torr. & Gray
SCMI	*Scirpus microcarpus*	Panicled bulrush	SCMI2	*Scirpus microcarpus* J. & K. Presl
ERHE	*Eriogonum heracleoides*	Parsnipflower buckwheat	ERHE2	*Eriogonum heracleoides* Nutt.
PENST	*Penstemon* spp.	Penstemon		
LALA3	*Lathyrus latifolius*	Perennial peavine	LALA4	*Lathyrus latifolius* L.
KOCR	*Koeleria cristata*	Prairie Junegrass	KOMA	*Koeleria macrantha* (Leded.) J.A. Schultes
AMAL2	*Amaranthus albus*	Prostrate pigweed	AMAL	*Amaranthus albus* L.
RHPU	*Rhamnus purshiana*	Pursh's buckthorn	FRPU7	*Frangula purshiana* (DC.) Cooper
POTR	*Populus tremuloides*	Quaking aspen	POTR5	*Populus tremuloides* Michx.
PERA3	*Peraphyllum ramosissimum*	Rattan's beardtongue	PERA3	*Penstemon rattanii* Gray
FERU	*Festuca rubra*	Red fescue	FERU2	*Festuca rubra* L.
ERSP3	*Erigonum sphaerocephalum*	Rock buckwheat	ERSP7	*Eriogonum sphaerocephalum* Dougl. ex Benth.
ROSA	*Rosa* spp.	Rose		
CARO	*Carex rossii*	Ross' sedge	CARO5	*Carex rossii* Boott
STRO	*Streptopus roseus*	Rosy twistedstalk	STRO4	*Streptopus roseus* Michx.
GATR2	*Galium tricornatum*	Roughfruit corn bedstraw	GATR6	*Galium tricornutum* Dandy
PONE2	*Poa nevadensis*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POSA	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
POSA3	*Poa sandbergii*	Sandberg bluegrass	POSE	*Poa secunda* J. Presl
AMAL	*Amelanchier alnifolia*	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia* (Nutt.) Nutt. ex M. Roemer
SCORIA	*Scoria* derived soil	Scoria		

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
LOMA	*Lomatium macrocarpum*	Seaside lobularia	LOMA	*Lobularia maritima* (L.) Desv.
CAREX	*Carex* spp.	Sedges		
ERPU	*Erigeron pumilus*	Shaggy fleabane	ERPU2	*Erigeron pumilus* Nutt.
ABMAS	*Abies magnifica* var. *shastensis* Lemmon	Shasta red fir	ABSH	*Abies X shastensis* (Lemmon) Lemmon
SALA2	*Salix lasiandra*	Shining willow	SALU	*Salix lucida* Muhl.
POFR	*Potentilla fruticosa*	Shrubby cinquefoil	PEFL15	*Pentaphyloides floribunda* (Pursh) A.Love
MOSI	*Montia sibirica*	Siberian springbeauty	CLSIS	*Claytonia sibirica* var. *sibirica*
PYSE	*Pyrola secunda* L.	Sidebells wintergreen	ORSE	*Orthilia secunda* (L.) House
LUSE	*Lupinus sericeus*	Silky lupine	LUSE4	*Lupinus sericeus* Pursh
ARCA	*Artemisia cana*	Silver sage	ARCA13	*Artemisia cana* Pursh
CACA4	*Carex canescens*	Silvery sedge	CACA11	*Carex canescens* L.
CASI3	*Carex sitchensis* Prescott ex Bong.	Sitka sedge	CAAQD	*Carex aquatilis* var. *dives* (Holm) Kukenth.
ALSI	*Alnus sinuata*	Sitka alder	ALVIS	*Alnus viridis* ssp. *sinuate* (Regel) A.& D. Love
POPU	*Polemonium pulcherrimum*	Skunkleaf polemonium	POPU3	*Polemonium pulcherrimum* Hook.
POCU	*Poa cusickii*	Skyline bluegrass	POFEF	*Poa fendleriana* ssp. *Fendleriana* (Steud.) Vasey
CANE	*Calamagrostis neglecta*	Slimstem reedgrass	CASTS5	*Calamagrostis stricta* ssp. *stricta* var. *stricta* (Timm) Koel.
ALPA2	*Allium parvum*	Small onion	ALPA3	*Allium parvum* Kellogg
PHCO2	*Phlox colubrina*	Snake River phlox	PHCO10	*Phlox colubrina* Wherry & Constance
ERNI	*Eriogonum niveum*	Snow buckwheat	ERNI2	*Eriogonum niveum* Dougl. ex Benth.

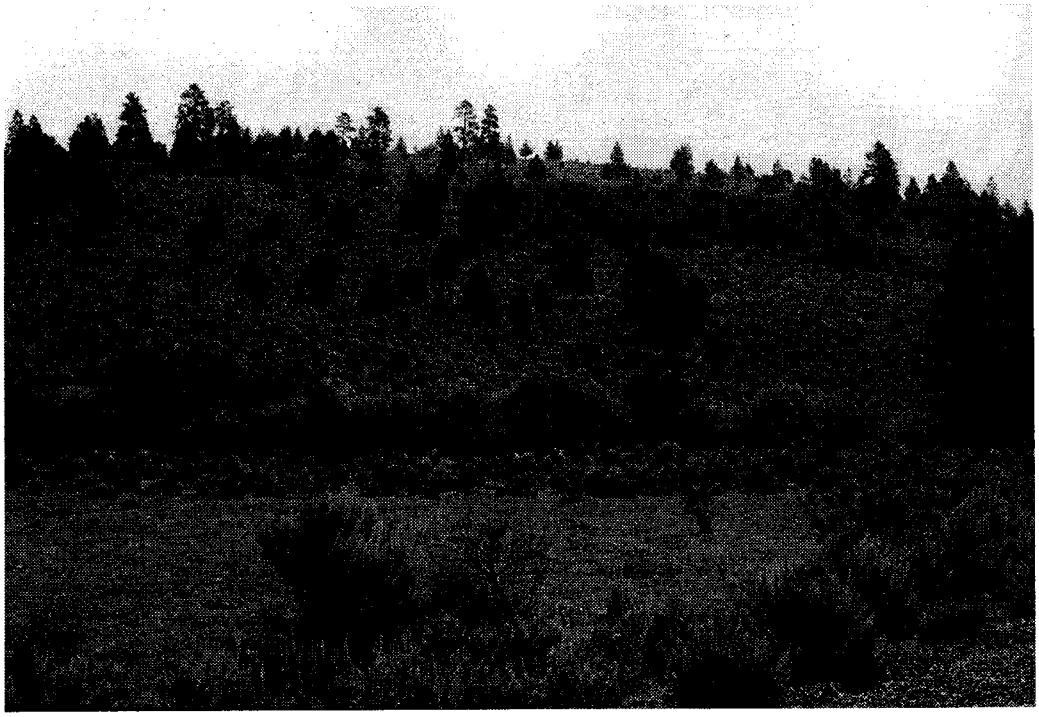
Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
SYMPH	*Symphoricarpos* spp.	Snowberry		
CADI	*Carex disperma*	Softleaf sedge	CADI6	*Carex disperma* Dewey
ARLO	*Arnica longifolia*	Spearleaf arnica	ARLO6	*Arnica longifolia* D.C. Eat.
ASLE	*Astragalus lentiginosus*	Specklepod milkvetch	ASLE8	*Astragalus lentiginosus* Dougl. ex Hook.
GLNE	*Glossopetalon nevadense*	Spiny greasebush	GLSPA	*Glossopetalon spinescens* var. *Adrdum* M.E. Jones
SPIRAEA	*Spiraea* spp.	Spirea		
LULA2	*Lupinus laxiflorus*	Spur lupine	LUARL5	*Lipinus argenteus* ssp. *argenteus* var. *laxiflorus* (Dougl. ex Lindl.) Dorn
PERA3	*Peraphyllum ramosissimum*	Squaw apple	PERA4	*Peraphyllum ramosissimum* Nutt.
SMST	*Smilacina stellata* (L.) Desf.	Starry false Solomon's seal	MAST4	*Maianthemum stellatum* (L.) Link
ARVI	*Arctostaphylos viscida*	Sticky whiteleaf manzanita	ARVI4	*Arctostaphylos viscida* Parry
RIVI	*Ribes viscosissimum*	Sticky currant	RIVI3	*Ribes viscosissimum* Pursh
ARRI	*Artemisia rigida*	Stiff sagebrush	ARRI2	*Artemisia rigida* (Nutt.) Gray
ERPE	*Erigeron peregrinus*	Subalpine fleabane	ERPE3	*Erigeron peregrinus* (Banks ex Pursh) Greene
ABLA2	*Abies lasiocarpa* A. Murray bis	Subalpine fir	ABBI2	*Abies bifolia* A. Murray bis only for the Blue and Wallowa Mountains and the Colville NF
OSCH	*Osmorhiza chilensis*	Sweetcicely	OSBE	*Osmorhiza berteroi* DC.
TRCA	*Trisetum canescens*	Tall oatgrass	TRCEC	*Trisetum cernuum* var. *canescens* (Buckl.) Beal
CADE	*Carex deweyana*	Taperfruit shortscale sedge	CALE24	*Carex leptopoda* Mackenzie
LALA2	*Lathyrus lanszwertii*	Thickleaf peavine	LALA3	*Lathyrus lanszwertii* Kellogg

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
ALTE	*Alnus tenuifolia*	Thinleaf alder	ALINT	*Alnus incana* ssp. *tenuifolia*
GATR3	*Galium trifidum*	Threepetal bedstraw	GATR2	*Galium trifidum* L.
ARTR2	*Artemisia tripartita*	Threetip sagebrush	ARTR4	*Artemisia tripartita* Rydb.
STTH	*Stipa thurberiana*	Thurber's needlegrass	STTH2	*Stipa thurberiana* Piper
ERTH	*Eriogonum thymoides*	Thymeleaf buckwheat	ERTH4	*Eriogonum thymoides* Benth.
SYMO	*Symphoricarpos mollis*	Trailing snowberry	SYHE	*Symphoricarpos hesperius* G.N. Jones
STJA	*Stellaria jamesiana*	Tuber starwort	PSJA2	*Pseudostellaria jamesiana* (Torr.) W.A. Weber & R.L. Hartman
ERPE3	*Eragrostis pectinacea*	Tufted lovegrass	ERPE	*Eragrostis pectinacea* (Michx.) Nees ex Steud.
CALE5	*Carex lenticularis*	Tufted sedge	CALE8	*Carex lenticularis* Michx.
LIBO	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
LIBO2	*Linnaea borealis*	Twinflower	LIBO3	*Linnaea borealis* L.
MADI2	*Maianthemum dilatatum*	Twoleaf false Solomon's seal	MADI	*Maianthemum dilatatum* (Wood) A. Nels. & J.F. Macbr.
PHHE	*Phacelia heterophylla*	Varileaf phacelia	PHHE2	*Phacelia heterophylla* Pursh
VEAN	*Veronica anagallis-aquatica*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VECA2	*Veronica catenata*	Water speedwell	VEAN2	*Veronica anagallis-aquatica*
VAOC	*Valeriana occidentalis*	Western valerian	VAOC2	*Valeriana occidentalis* Heller
COST	*Cornus stolonitera*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
STOC	*Stipa occidentalis*	Western needlegrass	STOC2	*Stipa occidentalis* Thurb. ex S. Watts
STOC2	*Stenanthium occidentale*	Western stenanthium	STOC	*Stenanthium occidentale* Gray

Ecoclass name			Plants name	
Code	**Scientific name**	**Common name**	**Code**	**Genus and species**
CAME	*Cassiope mertensiana*	Western moss heather	CAME7	*Cassiope mertensiana* (Bong.) D. Don
COOC	*Cornus occidentalis*	Western dogwood	COSEO	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg
PONE	*Poa nervosa*	Wheeler bluegrass	PONE2	*Poa nervosa* (Hook.) Vasey
ERMO	*Erythronium montanum*	White avalanchelily	ERMO8	*Erythronium montanum* S. Wats.
ALRH	*Alnus rhombifolia*	White alder	ALRH2	*Alnus rhombifolia* Nutt.
SPBE	*Spiraea betulifolia*	White spirea	SPBE2	*Spiraea betulifolia* Pallas
SYOR	*Symphoricarpos oreophilus*	Whorteleaf snowberry	SYOR2	*Symphoricarpos oreophilus* Gray
VAMY	*Vaccinium myrtillus*	Whortleberry	VAMY2	*Vaccinium myrtillus* L.
CAEU	*Carex eurycarpa*	Widefruit sedge	CAAN15	*Carex angustata* Boott
ARNU3	*Aralia nudicaulis*	Wild sarsaparilla	ARNU2	*Aralia nudicaulis* L.
SALIX	*Salix* spp.	Willow		
EULA	*Eurotia lanata*	Winterfat	KRLA2	*Krascheninnikovia lanata* (Pursh) Guldenstaedt
RIMO2	*Ribes mogollonicum*	Wolf's currant	RIWO	*Ribes wolfii* Rothrock
PONE5	*Poa nemoralis*	Wood bluegrass	PONE	*Poa nemoralis* L.
LUZULA	*Luzula* spp.	Woodrush		
ERLA	*Eriophyllum lanatum*	Woolly eriophyllum	ERLA6	*Eriophyllum lanatum* (Pursh) Forbes
CALA3	*Carex lanuginosa*	Woolly sedge	CALA30	*Carex lanuginosa* Michx.
CALA4	*Carex lasiocarpa*	Woollyfruit sedge	CALA11	*Carex lasiocarpa* Ehrh.
SALU	*Salix lutea*	Yellow willow	SALU2	*Salix lutea* Nutt.

Appendix 7

Pacific Northwest Ecoclass Codes for Seral and Potential Natural Communities



Discussion—

Effective date: January 1998
Prior revision: November 1988

This publication is **updated periodically**. Be sure you are using the current edition.

Listings are divided into three groups: seral codes, structure codes, and potential natural community (PNC) codes for plant associations.

Seral codes—Seral status of vegetation is determined for each life-form layer in a plant community. This example is the Douglas-fir/ninebark/meadowrue (PSME/PHMA/THOC) discussed in appendix 5:

1. A two-letter PNC code (i.e., **CD** for Douglas-fir).
2. A one-letter code for source of seral status (**C** for a seral classification determined from an investigation).
3. A one-letter code for seral status of the tree, shrub, and herb layers (i.e., **L** for late seral tree layer, **M** for mid seral shrub layer, and **P** for PNC herb layer).

The code is **CDCLMP**.

It is read as a Douglas-fir PNC plant community in which seral status was classified from an investigation where the tree life-form is at late seral status, shrub life-form is at mid seral, and the herb life-form is at PNC status.

Seral status for a single life-form may be coded by using the example of PSME/PHMA/THOC:

The code is **CDCL**.

It is read as a Douglas-fir PNC where seral status was classified from an investigation as to late seral for the tree life-form.

When life-form layers are not present, they are noted by an "**X.**" For example, big sagebrush might be coded as **SDEXLM**, which is read as big sagebrush where seral status was estimated, no tree life-form, late seral shrub, and mid seral herbaceous life-form layers.

Structure codes—Vegetation structure may be coded for each life-form. This example is the Douglas-fir/ninebark/meadowrue (PSME/PHMA/THOC) discussed in appendix 5.

1. A two-letter PNC code (i.e., **CD** for Douglas-fir).
2. A two-letter code for size or height (i.e., **LT** for large trees).
3. A one-letter code for canopy cover (i.e., **M** for moderate).
4. A one-letter code for strata (i.e., **U** for uneven sized).

The code is **CDLTMU**.

It is read as a Douglas-fir PNC, large trees, moderate tree canopy, uneven tree strata.

Structure for a missing life-form layer layer is shown; the example is a logged stand of PSME/PHMA/THOC:

1. A two-letter PNC code (i.e., **CD** for Douglas-fir).
2. A two-letter life-form layer code (i.e., **TS** for tall shrub).
3. A one-letter code for cover (i.e., **M** for moderate).
4. A one-letter code for strata (i.e., **U** for uneven).

The code is **CDTSMU**.

Note that a lower life-form layer means the taller is less than 10 percent cover or is absent.

It is read as a Douglas-fir PNC with less than 10 percent canopy cover of trees, tall shrub life-form layer of moderate shrub canopy cover, and uneven shrub strata.

Structure codes, except shrub-herb (SH), end in a letter denoting life-form: trees end in "T," shrubs in "S," and herbs in "HE."

Seral status and structure may be combined; the example is PSME/PHMA/THOC:

1. List the seral status code first (i.e., **CDCLMP**).
2. Enter a "/" followed by structure and omit the two-letter PNC code (i.e., **CDCLMP/LTMU**).

The code is **CDCLMP/LTMU**. It is read as a Douglas-fir PNC in which seral status was classified from an investigation where the tree layer is in late seral status, shrub layer in mid seral, and an herb layer at PNC status, with large trees of moderate canopy cover and uneven strata.

A single seral status is coded as **CDCL/LTMU** for the tallest life-form.

3. Add structure of the other life-forms, if desired, by using a hyphen (-).

The code is **CDCLMP/LTMU-TSMU-HEDU** for seral status and structure in all three life-forms. It is read as a Douglas-fir PNC where seral status was classified from an investigation as to late seral tree layer, mid seral shrub layer, PNC status herb layer with large trees of moderate canopy cover and uneven strata, tall shrubs of moderate canopy cover and uneven strata, and herbs of dense cover and uneven strata.

PNC codes—Listings are as follows:

Code	Description of the code
CAG111	ABLA2-PIAL/CAGE: Subalpine fir-whitebark pine/elk sedge, R6 AG 3-1

Codes are divided into three units:

Series	Sub-series	Association
CA	G1	11

Series codes are alpha and are composed of two characters. Series represents the dominant species in PNC or the dominant physical item.

First character codes represent the first letter of key words such as "F" for forb, "G" for grass, "S" for shrub, and "C" for conifer. This code is followed by a second letter identifying the kind or nature of the forb, grass, shrub, or conifer. For example, "GB" represents "grass, bunch," or bunchgrass site potential, whereas "GS" represents "grass, subalpine" or subalpine grasslands. In conifers and hardwoods, the second letter represents the species of tree; for example "CP" means conifer, ponderosa, and "CH" means conifer, western hemlock. In the example above, "CA" means conifer, alpine, indicating subalpine, open parks of less than 40 percent tree canopy cover.

Subseries represent a refinement of series and may be alphanumeric or numeric.

The codes identify species in the understory of trees and shrubs or groups of secondary species in simple plant communities like bluebunch wheatgrass. For example, CPG1 means grass understory under ponderosa pine in which the first group of grasses are of the bunch form and are dominated by wheatgrass and fescue. CPS1 means shrub understory under ponderosa pine dominated by sagebrush. In the example above, "G1" means sedge understory for "CAG1" or subalpine parks with sedge ground vegetation.

Some subseries codes may contain an "X," "Y," or "Z" as the first letter (i.e., CEX1). These denote special kinds of ecological units that are limited to the National Forest cited.

A description of the ecological unit is given; for example:

CEX104 MALHEUR (04) 2A: slope less than 30 percent; CES3 11, CES4 11

This is read as ecological unit CEX104, which is limited to the Malheur National Forest, Forest number 04, forest map code 2A, designated as slopes less than 30 percent, and is made up of associations CES311 (sub-subalpine fir/big huckleberry) and CES4 11 (sub-subalpine fir/grouse huckleberry).

Resource inventory in the Pacific Northwest Region uses groups of plant associations as a primary mapping stratification. Some of these groups are identified by established series codes. Others have additions to the series codes in the subseries position. All are alpha characters. The first letter follows the descriptions already established for conifer, hardwood, and nonvegetated codes. The second letter indicates environmental criteria as follows: C = cool, D = dry, H = hot, M = mesic, W = wet. And at times, another vegetation code is used to conform to a four-letter or alphanumeric code. Examples are SWXX = shrub wetlands, GBFX = Snake River bunchgrass-forb, and CHSC = western hemlock/rhododendron-cool sites. Each resource inventory ecoclass code is described.

Association codes are all numeric. They identify classified ecological units described in various published documents. The abbreviation and reference for each publication follow. In the example above, CAG111 identifies the subapline fir-whitebark pine/elk sedge open parkland association.

Description of the code is divided into three parts: (1) the technical name, (2) the common name, and (3) the reference where the association is described. The technical name uses four letters and sometimes a numeral for a species. Letters

are taken from the first two letters of the genus and the first two letters of the species; e.g., *Poa sandbergii* is POSA. When two or more species have the same letters, a numeral follows the code to identify which species is represented. For example, several species have the letter code POSA. *Poa sandbergii* is the third species with this code so it is identified as POSA3. *Polygonum sawatchense* is POSA and *P. sachalinense* is POSA2.

Appendix 6 lists these codes, the scientific name, common name, and the synonyms in the Natural Resource Conservation Service PLANTS listing. PLANTS codes have been established for the United States.

A geographic locator is sometimes required when associations that are considered to be different are dominated by the same species. For example, the cold, floristically depauperate subalpine fir/grouse huckleberry plant community occurs in the Blue Mountains, Cascade Range, Okanogan uplands, and Rocky Mountains. Major differences in geology, soils, and climate among these locations, variation in productivity, and dissimilar successional development clearly imply that "ABLA2/VASC" should be considered as several different associations. These associations are identified by a geographical epithet: ABLA2/VASC-BLUES for the Blue Mountains, ABLA2/VASC-OKAN for the Okanogan uplands, and ABLA2/VASC-DAUB for Daubenmire's northern Idaho Rocky Mountains. The four-letter locator is explained in the common name identifier.

A common-name identifier follows the technical name. The reference that completely describes each association is cited last. For example:

CAG111 ABLA2-PIAL/CAGE: Subalpine fir-whitebark pine/elk sedge, R6 AG 3-1

Abies lasiocarpa is ABLA2 which is codominant with PIAL, *Pinus albicaulis*, with an understory dominated by CAGE, *Carex geyeri*. The common name is subalpine fir-whitebark pine/elk sedge. It is described in the publication R6 AG 3-1: Hall, Frederick C. 1973. Plant communities of the Blue Mountains in eastern Oregon and southeastern Washington. R-6 Area Guide 3-1. Portland, OR, U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 62 p. The references cited are shown below.

When a plant association appears in more than one publication, all publications containing the association are cited. Productivity data by association are being used to calibrate the forest vegetation simulation (FVS) computer programs. The publication from which data were extracted is shown by underlining. Brockway and others (1983) association guide, R6 Ecol 130-83, summarized productivity for seven silver fir associations occurring on the Gifford Pinchot, Mount Hood, and Willamette National Forests in a regional summary on page 122 (in Brockway and others 1983). His regional data is used in the FVS programs and is noted by an asterisk following the reference (R6 E 130-83*).

Ecoclass citation references—

Dris '64: **Driscoll, Richard S. 1964.** Vegetation-soil units in the central Oregon juniper zone. Res. Pap. PNW-19. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experimental Station. 60 p.

Dyrn '74: **Dyrness, C.T.; Franklin, Jerry F.; Moir, W.H. 1974.** A preliminary classification of forest communities in the central portion of the western Cascades in Oregon. Bull. 4. [Place of publication unknown]: Coniferous Forest Biome, Ecosystem Studies, US/International Biological Program.

R6 AG 3-1: **Hall, F.C. 1973.** Plant communities of the Blue Mountains in eastern Oregon and southeastern Washington. R6 Area Guide 3-1. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 62 p.

R6 E 79-004: **Hopkins, W.E. 1979.** Plant associations of the Fremont National Forest. R6 Ecol 79-004. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 106 p.

R6 E 79-005: **Hopkins, W.E. 1979.** Plant associations of Klamath and South Chiloquin Ranger Districts. R6 Ecol 79-005. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 96 p.

R6 E 100-82: **Hemstrom, M.A.; Emmingham, W.H.; Halverson, N.M. [and others]. 1982.** Plant association and management guide for the Pacific silver fir zone, Mt. Hood and Willamette NF. R6 Ecol 100-1982. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 92 p.

R6 E 130-83: **Brockway, D.G.; Topik, C.; Hemstrom, M.A.; Emmingham, W.H. 1983.** Plant association and management guide for the Pacific silver fir zone, Gifford Pinchot NF. R6 Ecol 130-1983. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 76 p.

R6 E 132-83: **Williams, C.K.; Lillybridge, T.R. 1983.** Forested plant associations of the Okanogan NF. R6 Ecol 132-1983. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 116 p.

R6 E 133-83: **Hopkins, W.E.; Kovalchik, T.R. 1983.** Plant associations of the Crooked River National Grassland. R6 Ecol 133-1983. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 98 p.

R6 E 104-85: **Volland, L.A. 1985.** Plant associations of the central Oregon pumice zone. R6 Ecol 104-1985. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 138 p.

R6 E 220-86: **Hemstrom, M.A.; Logan, S.E. 1986.** Plant association and management guide, Siuslaw National Forest. R6 Ecol-220-1986. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 121 p.

R6 E 230-86: **Topik, C.; Halverson, N.M.; Brockway; D.G. 1986.** Plant association and management guide for the western hemlock zone, Gifford Pinchot National Forest. R6 Ecol 230-1986. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 133 p.

R6 E 232-86: **Halverson, N.M.; Topik, C.; VanVickle, R. 1986.** Plant association and management guide for the western hemlock zone, Mt. Hood National Forest. R6 Ecol 232-1986. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 111 p.

R6 E 255-86: **Johnson, C.G.; Simon, S.A. 1987.** Plant associations of the Wallowa-Snake Province. R6 Ecol 255-1986. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 513 p.

R6 E 257-86: **Hemstrom, M.A.; Logan, S.A.; Pavlat, W. 1986.** Plant association and management guide for the Willamette National Forest. R6 Ecol 257-1986. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 312 p.

R6 E TP-279-87: **Kovalchik, B.L. 1987.** Riparian zone associations of the Deschutes, Fremont, Ochoco, and Winema National Forests. R6 Ecol. Tech. Pap. 279-1987. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 171 p.

R6 E TP-001-88: **Henderson, J.A.; Peter, D.H.; Lesher, R.D. 1988.** Forested plant associations of the Olympic National Forest. R6 Ecol. Tech. Pap. 001-88. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 502 p.

R6 E TP-004-88: **Topik, C.; Halverson, N.M.; High, T. 1988.** Plant association and management guide for the ponderosa pine, Douglas-fir, and grand fir zones, Mt. Hood National Forest. R6 Ecol. Tech. Pap. 004-88. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 132 p.

R6 E TP-006-88: **Topik, C. 1989**. Plant association and management guide for the grand fir zone—Gifford Pinchot National Forest. R6 Ecol. Tech. Pap. 006-88. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 110 p.

R6 E TP-028-91: **Henderson, J.A.; Lesher, R.D.; Peter, D.H.; Shaw, D.C. 1992**. Field guide to the forested plant associations of the Mt. Baker-Snoqualmie National Forest. R6 Ecol TP 028-91. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 196 p.

R6 E TP-036-92: **Johnson, C.G., Jr.; Clausnitzer, R.R. 1992.** Plant associations of the Blue and Ochoco Mountains. R6 ERW TP 036-92. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region. 207 p.

R6 MTH-GP-TP08-95: **Topik, C.; Smith, D.; Diaz, N.; High, T. 1995.** Plant association and management guide for the mountain hemlock zone. Mt. Hood and Gifford-Pinchot National Forests. MTH-GP-TP-08-95. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region.

R6 NR ECOL-TP-22-97: **Crowe, Elisabeth A; Clausinitzer, Rodrick, R. 1997.** Mid-montain wetland plant associations of the Malheur, Umatilla, and Wallowa-Whitman National Forests. R6 NR TP-09-96. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region.

R6 NR TP-10-96: **Diaz, Nancy M.; Mellen, T. Kim. 1996.** Riparian ecological types—Gifford Pinchot and Mt. Hood National Forests/Columbia River Gorge National Scenic Area. R6 NR TP-10-96. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Region.

PNW-GTR-359: **Lillybridge, T.R.; Kovalchik, B.L.; Williams, C.K.; Smith, B.G. 1995.** Field guide for forested plant associations of the Wenatchee National Forest. Gen. Tech. Rep. PNW-GTR-359. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 352 p. In cooperation with: Pacific Northwest Region, Wenatchee National Forest.

PNW-GTR-360: **Williams, Clinton K.; Kelley, Brian F.; Smith, Bradley G.; Lillybridge, Terry R. 1995.** Forested plant associations of the Colville National Forest. Gen. Tech. Rep. PNW-GTR-360. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 370 p. In cooperation with: Pacific Northwest Region, Colville National Forest.

INT-34: **Pfister, R.D.; Kovalchik, B.L.; Arno, S.F.; Presby, R.C. 1977.** Forest habitat types of Montana. Gen. Tech. Rep. INT-34. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 174 p.

INT-114: **Steele, R.; Pfister, R.D.; Ryker, R.A.; Kittams, J.A. 1981.** Forest habitat types of central Idaho. Gen. Tech. Rep. INT-114. U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experimental Station. 138 p. [+ map].

INT-236: **Cooper, S.V.; Neiman, K.E.; Steele, R.; Roberts, D.W. 1987.** Forest habitat types of northern Idaho—a second approximation. Gen. Tech. Rep. INT-236. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 135 p.

INT-288: **Cole, David N. 1982.** Vegetation of two drainages in Eagle Cap Wilderness, Wallowa Mountains, Oregon. INT-288. U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experimental Station. 42 p.

R4 ECOL-8501: **Youngblood, Andrew P.; Padgett, Wayne G.; Winward, Alma H. 1985.** Riparian community types classification of eastern Idaho-western Wyoming. R4 ECOL-8501. [Place of publication unknown]: U.S. Department of Agriculture, Forest Service, Intermountain Region. 78 p.

R4 ECOL-8901: **Youngblood, Andrew P.; Padgett, Wayne G.; Winward, Alma H. 1989.** Riparian community types classification of Utah and southeastern Idaho. R4 ECOL-8901. [Place of publication unknown]: U.S. Department of Agriculture, Forest Service, Intermountain Region. 191 p.

R4 ECOL-9501: **Manning, Mary E.; Padgett, Wayne G. 1995.** Riparian community type classfication for Humbolt and Toiyabe National Forests, Nevada and eastern California. R4 ECOL-9501. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Region. 306 p.

MISC. #54: **Hansen, Paul L.; Boggs, Keith L.; Cook, Bradley, J. [and others]. 1995.** Classification and management of Montana's riparian and wetland sites. Misc. Publ. 54. Missoula, MT: Montana Riparian Association.

MISC0110: **Clausnitzer, R.R.; Zamora, B.A. 1987.** Forest habitat types of the Colville Indian Reservation. Publ. MISC0110. Pullman, WA: Agriculture Research Center, Washington State University. 110 p.

Daub '68: ***Daubenmire, R.; Daubenmire, Jean B. 1968.*** Forest vegetation of eastern Washington and northern Idaho. Wash. Agr. Exp. Stat. Tech. Bull. 60. Pullman, WA: Washington State University. 104 p.

Daub '70: **Daubenmire, R. 1970.** Steppe vegetation of Washington. Wash. Agr. Exp. Stat. Tech. Bull. 62. Pullman, WA: Washington State University. 131 p.

Willa: **U.S. Department of Agriculture, Forest Service.** [Date unknown]. Soil inventory mapping units. Eugene, OR: Willamette National Forest.

Sius: **U.S. Department of Agriculture, Forest Service.** [Date unknown]. Inventory study of the Dunes National Recreation Area. Corvallis, OR: Siuslaw National Forest.

W.Spr: **Marsh, R.; Helliwell, R.; Rodgers, J. 1987.** Plant association guide for the commercial forest of the Warm Springs Indian reservation. Warm Springs, OR: Warm Springs Indian Reservation. 142 p.

MONO#19: **Franklin, J.F.; Moir, W.H.; Hemstrom, M.A. [and others]. 1988.** The forest communities of Mount Rainier National Park. Scientific Monog. Ser. 19. Washinton, DC: U.S. Department of the Interior, National Park Service. 194 p.

Bull. 35: **Hironaka, M.; Fosberg, M.A.; Winward, A.H. 1983.** Sagebrush-grass habitat types of southern Idaho. Bull. 35. Moscow, ID: University of Idaho, Forest, Wildlife and Range Experimental Station, College of Forestry. 44 p.

XB-0936: **Zamora, B.A. 1983.** Forest habitat types of the Spokane Indian Reservation. Res. Bull. XB-0936. Pullman, WA: Agriculture Research Center, Washington State University. 65 p.

Codes for Pacific Northwest ecoclass identification—

7/11/95

Seral codes—First and second characters are PNC series codes, third character is seral source, fourth is tree seral status, fifth is shrub status, and sixth is herb status.

PNC series codes (first two characters)

Coniferous forest

CA	Alpine open, forest park
CC	Western redcedar
CD	Douglas-fir
CE	Subalpine fir, Engelmann spruce
CF	Silver or noble fir
CH	Hemlock, western
CJ	Juniper, western
CL	Lodgepole pine
CM	Mountain hemlock
CP	Ponderosa, Jeffery pine
CR	Red fir
CS	Sitka spruce
CW	Grand or white fir

Hardwoods

HA	Alder
HB	Bigleaf maple
HC	Cottonwood-ash bottoms
HL	Canyon live oak tree size
HO	Oak, Oregon or black
HQ	Quaking aspen
HT	Tanoak tree size

Forblands

FM	Moist (mesic) forbland
FS	Subalpine or alpine forbland
FW	Wet forbland

Grasslands

GA	Annual grasslands
GB	Bunchgrasses
GM	Mesic (forest zone) grasslands
GR	Rhizomatous grass-sedge
GS	Subalpine or alpine grass or sedge lands

Meadows (wet) grass-sedge

MD	Dry meadow
MM	Moist meadow
MS	Subalpine or alpine wet meadow
MT	Tule, standing water
MW	Wet meadow

Shrublands

SC Chaparral
SD Dry shrubland (sagebrush)
SM Mesic (forest zone) shrublands
SS Subalpine to alpine shrublands
SW Wet shrublands

Seral status—

__PNC Series Code

CDELMP is an example of Douglas-fir where seral status was estimated as late seral tree layer, mid seral shrub layer, and PNC herb layer.

_Source of seral status (*third character*)

C Classified as seral: an investigation or research study that has classified seral status in the PNC being evaluated.

E Estimated as seral: where seral status has been estimated based on the observer's best analysis of the stand.

A Altered site: where disturbance has changed the historic PNC, a soil or vegetation threshold has been crossed, or an estimation of seral status may not be possible.

___Seral status codes (tree fourth character, shrub fifth character, herb sixth character)

X TREE seral status code
X SHRUB seral status code
X HERB seral status code

P PNC status: the potential natural community under existing environment; seral species scarce to absent.

L Late seral: PNC species are dominant but seral species still persist.

M Mid seral: PNC species are approaching equal proportions with seral species.

E Early seral: clear dominance of seral species; PNC species absent or very low in cover; absence of a life-form layer, such as absence of trees in a forest PNC.

X None: when a life-form is not present or status is not determined.

D Depauperate: low canopy cover and species diversity in a life-form due to dense woody cover (i.e., stem exclusion stage).

Structure codes—First and second characters are PNC series codes, third and fourth are tree structure or shrub height, fifth is canopy cover, and sixth is strata.

For herb structure

__PNC series code (first and second characters)

CDMTMU is an example of Douglas-fir of medium sized trees of moderate canopy cover and uneven strata.

__Tree structural codes (third and fourth characters)

SH Shrub-herb: trees, if present, less than 1 inch d.b.h.; area may be dominated by grasses, herbs, shrubs or bare ground.

ST Sapling trees: trees from 1 to 4.9 inches d.b.h..

PT Pole trees: trees from 5 to 8.9 inches d.b.h..

MT Medium trees: trees from 9 to 20.9 inches d.b.h..

LT Large trees: trees from 21 to 31.9 inches d.b.h..

GT Giant trees: trees from 32 to 47.9 inches d.b.h..

RT Remnant trees: trees larger than 48 inches d.b.h..

_Tree canopy cover codes (fifth character)

N None: less than 10 percent canopy cover.

O Open: from 10 to 40 percent canopy cover.

M Moderate: from 41 to 69 percent canopy cover.

D Dense: over 70 percent canopy cover of trees.

_Tree strata codes (sixth character)

N None: no tree life-form.

E Even strata: a single tree strata; less than 30 percent difference in size of trees.

U Uneven strata: two or more tree strata; more than 30 percent difference in size between trees. To qualify as a strata, canopy cover in the strata must exceed 10 percent, except for regeneration less than 1 inch d.b.h. where at least 100 established trees per acre (22 feet between trees) qualifies as a strata.

For shrub structure

__PNC Series code (first and second characters)

CDMSOE is an example of Douglas-fir with a medium tall shrub layer of open canopy cover and even sized strata.

__Shrubland structural codes (third and fourth characters)

NS No shrubs: less than 10 percent canopy cover.

LS Low shrub: shrubs less than 1.7 feet tall (20 inches).

MS Medium shrubs: shrubs 1.7 to 6.5 feet tall.

TS Tall shrubs: shrubs 6.5 to 16.5 feet tall.

_Shrubland canopy cover codes (fifth character)

N None: less than 10 percent canopy cover of shrubs

O Open: from 10 to 25 percent canopy cover of shrubs

M Moderate: from 26 to 66 percent canopy cover of shrubs

D Dense: over 67 percent canopy cover of shrubs.

_Shrubland strata codes (sixth character)

N None: no shrub strata.

E Even strata: one shrub stratum; less than 30 percent difference in height.

U Uneven strata: two or more shrub strata, which may be made up of different species of different heights; greater than 30 percent difference in height; greater than 10 percent cover in a second strata.

For herb structure

__PNC Series code (first and second characters)

CDHEDE is an example of Douglas-fir with an herb layer of dense canopy cover and one strata.

__Herbland structural code: (third and fourth characters)

HE Herbland: the only life-form present.

_Herbland canopy cover (fifth character)

N None: less than 10 percent canopy cover of herbs and cryptogams.

O Open: from 10 to 25 percent canopy cover of herbs.

M Moderate: from 26 to 66 percent canopy cover of herbs.

D Dense: greater than 67 percent cover of herbs.

_Herbland strata codes (sixth character)

N None: no herb life-form (bare ground).

E Even strata: one strata of herbs; less than 30 percent difference in height; cryptogams at less than 10 percent cover.

U Uneven strata: two or more herb strata, greater than 30 percent difference in height; cryptogams at 10 percent or greater cover constitute a strata; greater than 10 percent cover in a second strata.

Potential Natural Community (PNC) codes—

A	**Administrative or agricultural**
AX	Administrative or agricultural
AB	Buildings, structures, roads
ABA1	Heliport
ABA2	Runway, landing strip
ABA9	Aircraft facilities
ABC9	Campground, developed
ABP9	Parking area
ABR8	Road, boat launch area
ABS1	Rock and gravel storage area
ABS9	Open storage area
AC	Cultivated land
AD	Dump for trash, garbage, etc.
ADG9	Garbage dump
ADL9	Land fill, soil, gravel, or rock dump (sanitary)

ADT9	Trash dump, refuse dump
AG	Grassland, permanent pasture
AO	Orchards
AR	Recreation areas, parks, play areas, golf courses

C **Coniferous Forest:** underlined publications are used for productivity data. The underlined R6 E 130-83* is marked with an asterisk (*) and provides combined productivity data from three publications for silver fir (ABAM).

CA	**Subalpine fir, mountain hemlock, whitebark pine open parks**
CAXX	Mountain hemlock subalpine parks, resource inventory
CAC0	Subalpine fir, mountain hemlock, whitebark pine open parks
CAC1	LALY-OKAN: subalpine larch associations, R6 E 132-83, resource inventory, INT-34, INT-236
CAC111	LALY/CAME/LUPE: subalpine larch/heather-lupine, PNW-GTR-259
CAC112	LALY/DROC: subalpine larch/white dryad, PNW-GTR-259
CAC113	LALY/JUCO4: subalpine larch/common juniper, PNW-GTR-359
CAC114	LALY/VADE-CAME: subalpine larch/blueleaved huckleberry-heather, PNW-GTR-359
CAC115	LALY/VASC/LUHI: subalpine larch/grouse huckleberry/woodrush, PNW-GTR-359
CAC2	Alaska-cedar dominant
CAC3	Lodgepole pine dominant, INT-34
CAC4	Whitebark pine dominant; INT-144, INT-236, INT-34
CAC5	Subalpine fir dominant
CAC6	Mountain hemlock dominant
CAF0	Subalpine fir, hemlock, whitebark pine open parks with forb ground vegetation, R6 E TP 036-92
CAF1	Subalpine park-beargrass
CAF2	Subalpine park-fleeceflower, R6 E TP 036-92
CAF211	TSME-ABLA2/PONE4: mountain hemlock-subalpine fir/Newberry's knotweed, R6 MTH-GP-TP-08-95
CAF311	TSME-ABLA2/ASLE2: mountain hemlock-subalpine fir/cascades aster, R6 MTH-GP-TP-08-95
CAF321	PIAL/DROC: whitebark pine/white dryad, PNW-GTR-359
CAG0	Subalpine fir, hemlock, whitebark pine open parks with grass
CAG1	Subalpine park-sedge: DAUB '68, INT-114
CAG111	ABLA2/CAGE: subalpine fir/elk sedge, R6 AG 3-1, R6 E TP 036-92
CAG112	PIAL/CARU: whitebark pine/pinegrass, R6 E 132-83, PNW-GTR-359, PNW- GTR-360, INT-34
CAG2	Subalpine park-green fescue
CAG211	TSME-ABLA2/FEVI: mountain hemlock-subalpine fir/green fescue, R6 MTH-GP-TP-08-95
CAG221	PIAL/FEVI: whitebark pine/green fescue, PNW-GTR-359

CAG3	Subalpine park-woodrush, R6 E TP 036-92
CAG311	TSME/LUHI: mountain hemlock/Hitchcocks' woodrush, R6 MTH-GP-TP-08-95
CAG312	TSME-PIAL/LUHI: mountain hemlock-whitebark pine/Hitchcock's woodrush, R6 MTH-GP-TP-08-95
CAG4	Subalpine park-needlegrass, R6 E TP 036-92
CARR	Rocky subalpine fir-whitebark pine
CARS	Steep, rocky, subalpine fir-whitebark pine
CARX	Rocky subalpine fir-whitebark pine parks, rough, steep
CAS0	Subalpine fir, hemlock, pine open parks with shrubs
CAS1	Subalpine park-sagebrush
CAS2	Subalpine park-heather-heath
CAS211	TSME/PHEM-VADE: mountain hemlock/red heather-delicious huckleberry, R6 MTH-GP-TP-08-95
CAS221	PIAL/CAME/LUPE: whitebark pine/heath/lupine, PNW-GTR-359
CAS3	Subalpine park-grouse huckleberry
CAS311	PIAL/VASC/LUHI: whitebark pine/grouse huckleberry/woodrush, PNW-GTR-359
CAS4	Subalpine park-mountain juniper-pinemat manzanita
CAS411	TSME-ABLA2/JUCO4: mountain hemlock-subalpine fir/mountain juniper, R6 MTH-GP-TP-08-95
CAS421	PIAL/JUCO4: whitebark pine/common juniper, PNW-GTR-359
CC	**Redcedar, western**
CCC0	Redcedar with additional important conifers
CCC1	Redcedar-yew
CCC2	Redcedar-western hemlock
CCFA	Redcedar/ beadlily, low forb, resource inventory
CCF0	Redcedar with forb dominated ground vegetation
CCF1	Redcedar/ladyfern
CCF110	THPL/ATFI-STCO4: redcedar/ladyfern-Cooley's hedgenettle, R6 NR TP-10-96
CCF121	THPL/ATFI: redcedar/ladyfern, Daub '68, INT-236
CCF211	THPL-ABGR/ACTR: redcedar-grand fir/vanillaleaf, R6 E TP-004-88, R6-NR-TP-10-96
CCF212	THPL/ACTR: redcedar/vanillaleaf, R6 E TP-006-88, R6-NR-TP-10-96
CCF221	THPL/CLUN: redcedar/queen's cup beadlily, PNW-GTR-360, INT-34, XB-0936, INT-236
CCF222	THPL/ARNU3: redcedar/wild sarsparilla, PNW-GTR-360, MISC0110
CCM0	Redcedar wetlands (moist to wet soil)
CCM1	Redcedar/skunk cabbage wetland
CCM2	Redcedar/sedge wetland
CCM3	Redcedar-coastal lodgepole, labrador tea

CCS0 Redcedar with shrub-dominated ground vegetation
CCS1 Redcedar/salmonberry, thimbleberry
CCS110 THPL/RUSP/OXOR: redcedar/salmonberry/oxalis, R6 NR TP-10-96

CCS2 Redcedar/devil's club, resource inventory
CCS211 THPL/OPHO: redcedar/devil's club, PNW-GTR-359, PNW-GTR-360, INT-236, INT-34, Daub '68
CCS221 THPL-ABGR/OPHO: redcedar-grand fir/devil's club, R6 E TP-006-88

CCS3 Redcedar/pachistima-huckleberry
CCS311 THPL/VAME: redcedar/big huckleberry, PNW-GTR-360
CCS321 THPL/PAMY: redcedar/pachistima, Daub '68

CCS4 Redcedar/Sitka alder
CCS5 Redcedar/salal, Oregongrape

CD Douglas-fir

CDC0 Douglas-fir with important associated conifers
CDC1 Douglas-fir-Port-Orford-cedar/yew
CDC2 Douglas-fir-sugar pine, southwestern Oregon
CDC3 Douglas-fir-incense-cedar, southwestern Oregon, Douglas-fir, infertile, resource inventory
CDC4 Douglas-fir-white, grand fir, resource inventory
CDC5 Douglas-fir-ponderosa pine, Jeffrey pine, southern Oregon
CDC511 PIPO-PSME/PUTR-CEVE: ponderosa-Douglas-fir/bitterbrush-ceanothus, W.Spr.
CDC512 PIPO-PSME/SYMPH: ponderosa-Douglas-fir/snowberry, W.Spr.

CDC6 Douglas-fir-redwood
CDC7 Douglas-fir-western hemlock
CDC711 PSME-TSHE/BENE: Douglas-fir-western hemlock-dwarf Oregongrape, R6 E 257-86
CDC712 PSME-TSHE/RHMA: Douglas-fir-western hemlock/rhododendron, R6 E 257-86
CDC713 PSME-TSHE/GASH: Douglas-fir-western hemlock/salal, R6 E 257-86

CDF0 Douglas-fir with forb-dominated ground vegetation
CDF1 Douglas-fir/beargrass
CDF2 Douglas-fir/twinflower
CDF211 PSME/LIBO2: Douglas-fir/twinflower, INT-114, INT-34

CDF3 Douglas-fir/arnica, low herbs
CDF311 PSME/ARCO: Douglas-fir/arnica, INT-114, INT-34
CDF312 PSME/OSCH: Douglas-fir/osmorhiza, INT-114

CDF4 Douglas-fir with medium-tall herbs
CDF411 PSME/PEFR3: Douglas-fir/bush penstemon, PNW-GTR-359

CDG0 Douglas-fir with grass-dominated ground vegetation
CDG1 Douglas-fir/pinegrass-elk sedge, Douglas-fir/sodgrass, resource inventory
CDG111 PSME/CAGE-BLUE: Douglas-fir/elk sedge-Blue Mountains, R6 AG 3-1, R6 E TP 036-92
CDG112 PSME/CARU-BLUE: Douglas-fir/pinegrass-Blue Mountains, R6 E TP 036-92

CDG113 PSME/CARU-ID: Douglas-fir/pinegrass-Idaho, INT-114
CDG121 PSME/CARU: Douglas-fir/pinegrass, R6 E 255-86, Daub '68, XB-0936
CDG122 PSME/CARU-ARUV: Douglas-fir/pinegrass-bearberry, Daub '68
CDG123 PSME/ARUV-OKAN: Douglas-fir bearberry-Okanogan, R6 E 132-83
CDG131 PSME/CARU-O&C: Douglas-fir/pinegrass-Okanogan and Colville, R6 E 132-83, PNW-GTR-360, INT-236, INT-34, MISC0110, Daub'68
CDG132 PSME/CAGE-WEN: Douglas-fir/elk sedge-Wenatchee, PNW-GTR-359
CDG134 PSME/CARU-AGSP: Douglas-fir/pinegrass-bluebunch wheatgrass, PNW-GTR-359
CDG141 PSME/CAGE: Douglas-fir/elk sedge, R6 E TP-004-88
CDG142 PSME/CAGE-ID: Douglas-fir/elk sedge-Idaho, INT-114, INT-236, INT-34

CDG2 Douglas-fir/bluewildrye
CDG3 Douglas-fir/bunchgrass
CDG311 PIPO-PSME/AGSP: ponderosa-Douglas-fir/wheatgrass, R6 E 132-83, PNW- GTR-360
CDG321 PSME/FEOC: Douglas-fir/western fescue, R6 E TP-004-88
CDG322 PSME/AGSP-WEN: Douglas-fir/bluebunch wheatgrass, PNW-GTR-359
CDG323 PSME/AGSP-ASDE: Douglas-fir/bluebunch wheatgrass-milkvetch, PNW-GTR-359
CDG331 PSME/AGSP: Douglas-fir/bluebuch wheatgrass, INT-114, INT-236, INT-34
CDG332 PSME/FEID: Douglas-fir/Idaho fescue, INT-114, INT-236, INT-34

CDG8 Douglas-fir/subalpine sedge

CDH0 Douglas-fir with important associated hardwood
CDH1 Douglas-fir/tanoak, resource inventory
CDH2 Douglas-fir/madrone
CDH3 Douglas-fir/white oak
CDH4 Douglas-fir/bigleaf maple
CDH5 Douglas-fir/chinkapin, canyon live oak
CDH6 Douglas-fir/California-laurel, California buckthorn

CDRR Rocky Douglas-fir
CDRS Steep slopes with Douglas-fir and little ground vegetation
CDRX Rocky, steep Douglas-fir with little ground vegetation

CDS0 Douglas-fir with shrub-dominated ground vegetation; Douglas-fir/bearberry, resource inventory
CDS1 Douglas-fir/canyon live oak, poison oak, rose
CDS2 Douglas-fir/oceanspray-vine maple
CDS211 PSME/HODI/BENE: Douglas-fir/oceanspray/Oregongrape, R6 E 257-86
CDS212 PSME/HODI/GRASS: Douglas-fir/oceanspray/grass, R6 E 257-86
CDS213 PSME/HODI/WHMO: Douglas-fir/oceanspray/whipple vine, R6 E 257-86
CDS221 PSME/HODI-ROGY: Douglas-fir/oceanspray-baldhip rose, R6 E TP-001-88
CDS231 PSME/HODI/CAGE: Douglas-fir/oceanspray/elk sedge, R6 E TP-004-88
CDS241 PSME/ACCI/FEOC: Douglas-fir/vine maple/western fescue, R6 E TP-006-88
CDS151 PSME/HODI: Douglas-fir/oceanspray, Dyrn '74
CDS252 PSME/ACCI/GASH: Douglas-fir/vine maple/salal, Dyrn '74
CDS253 PSME/ACCI/BERE: Douglas-fir/vine maple/Oregongrape, Dyrn '74
CDS254 PSME/ACCI/WYMO: Douglas-fir/vine maple/whipplea, Dyrn '74
CDS255 PSME/GASH: Douglas-fir/salal, R6 E TP-001-88

CDS3 Douglas-fir/rhododendron-hazel-dogwood
CDS311 PSME-TSHE/COCO: Douglas-fir-western hemlock/hazel-steep, shallow soil, Willa

CDS4 Douglas-fir/ceanothus, manzanita, pachistima
CDS411 PSME/PAMY-OKAN: Douglas-fir/pachistima-Okanogan, R6 E 132-83, PNW- GTR-359
CDS412 PSME/PAMY/CARU: Douglas-fir/pachistima/pinegrass, PNW-GTR-359

CDS5 Douglas-fir/salal, Oregongrape; Douglas-fir/evergreen shrubs, resource inventory
CDS511 PSME/BERE: Douglas-fir/Oregongrape, INT-114
CDS6 Douglas-fir/spiraea-snowberry, bearberry; Douglas-fir/low shrub, resource inventory
CDS611 PSME/HODI: Douglas-fir/oceanspray, R6 AG 3-1, R6 E TP 036-92
CDS612 PSME-ABCO/SYAL/LIBO: Douglas-fir/common snowberry/twinflower, R6 E 104-85
CDS613 PSME-ABCO/SYAL/FORB: Douglas-fir/common snowberry/forb, R6 E 104-85
CDS614 PSME-ABCO/SYAL/CARU: Douglas-fir/common snowberry/pinegrass, R6 E 104-85
CDS621 Same as CDS633
CDS622 PSME/SYAL-WALLO: Douglas-fir/common snowberry-Wallowa, R6 E 255-86
CDS623 PSME/SYOR-WALLO: Douglas-fir/mountain snowberry-Wallowa, R6 E 255-86
CDS624 PSME/SYAL-BLUE: Douglas-fir/common snowberry-Blue Mountains, R6 E TP 036-92
CDS625 PSME/SYOR-BLUE: Douglas-fir/mountain snowberry-Blue Mountains, R6 E TP 036-92
CDS626 PSME/SYOR-ID: Douglas-fir/mountain snowberry-Idaho, INT-114
CDS627 PSME/SYAL-ID: Douglas-fir/common snowberry-Idaho, INT-114, Daub '68, XB-0936, INT-236, INT-34
CDS628 PSME/SYAL-FLOOD: Douglas-fir/common snowberry-flood plain, R6 NR TP-09-96
CDS629 PSME/SYOR: Douglas-fir/mountain snowberry, PNW-GTR-359
CDS631 PSME/ARUV-PUTR: Douglas-fir/bearberry-bitterbrush, R6 E 132-83
CDS632 PSME/SYOR-O&C: Douglas-fir/mountain snowberry-Okanogan and Colville, R6 E 132-83, PNW-GTR-360, INT-34
CDS633 PSME/SYAL: Douglas-fir/common snowberry, R6 E 132-83, PNW-GTR-360
CDS634 PSME/SPBE: Douglas-fir/spirea, R6 E 255-86
CDS635 PSME/SPBE-ID: Douglas-fir/spirea-Idaho, INT-114, INT-236, INT-34
CDS636 PSME/SYAL-WEN: Douglas-fir/common snowberry-Wenatchee, PNW-GTR-359
CDS637 PSME/SYAL/AGSP: Douglas-fir/common snowberry/bluebunch wheatgrass, PNW-GTR-359
CDS638 PSME/SYAL/CARU: Douglas-fir/common snowberry/pinegrass, PNW-GTR-359
CDS639 PSME/SPBEL/CARU: Douglas-fir/shinyleaf spirea/pinegrass, PNW-GTR-359

CDS640 PSME/SPBEL: Douglas-fir/shinyleaf spirea, PNW-GTR-359
CDS641 PSME/SYMO: Douglas-fir/spreading snowberry, R6 E 257-86
CDS651 PSME/ARUV: Douglas-fir/bearberry, R6 E TP-001-88, INT-34
CDS652 PSME/ARUV-RAIN: Douglas-fir/bearberry-Mount Rainier, MONO#19
CDS653 PSME/ARUV-WEN: Douglas-fir/bearberry-Wenatchee, PNW-GTR-359
CDS654 PSME/ARUV-PUTR: Douglas-fir/bearberry-bitterbrush, PNW-GTR-359
CDS655 PSME/ARUV/CARU: Douglas-fir/bearberry/pinegrass, PNW-GTR-359
CDS661 PSME/SYAL-MTH: Douglas-fir/common snowberry-Mount Hood, R6 E TP-004-88
CDS662 PSME/ARNE: Douglas-fir/pinemat manzanita, R6 E TP-004-88
CDS671 PSME/JUCO: Douglas-fir/common juniper, INT-114, INT-34
CDS672 PSME/CELE: Douglas-fir/mountain-mahogany, INT-114
CDS673 PSME/PUTR: Douglas-fir/bitterbrush, PNW-GTR-359
CDS674 PSME/PUTR-AGSP: Douglas-fir/bitterbrush/bluebunch wheatgrass, PNW- GTR-359
CDS675 PSME/PUTR/CARU: Douglas-fir/bitterbrush/pinegrass, PNW-GTR-359

CDS7 Douglas-fir/ninebark: Douglas-fir/tall shrub, resource inventory
CDS711 PSME/PHMA-BLUE: Douglas-fir/ninebark-Blue Mountains, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92
CDS715 PSME/PHMA-O&C: Douglas-fir/ninebark-Okanogan and Colville, R6 E 132-83, PNW-GTR-360, MISC0110
CDS716 PSME/PHMA/LIBO2: Douglas-fir/ninebark/twinflower, PNW-GTR-360
CDS717 PSME/PHMA-ID: Douglas-fir/ninebark-Idaho, INT-114
CDS721 PSME/PHMA-DAUB: Douglas-fir/ninebark-Daub '68, INT-236, INT-34, XB-0936
CDS722 PSME/ACGL-PHMA: Douglas-fir/Rocky Mountain maple-ninebark, R6 E 255-86
CDS723 PSME/ACGL: Douglas-fir/Douglas maple, INT-114
CDS724 PSME/ACGL-FLOOD: Douglas-fir/Rocky Mountain maple, flood plain, R6 NR-TP-09-96

CDS8 Douglas-fir/huckleberry
CDS811 PSME/VACCI: Douglas-fir/huckleberries, R6 E 132-83
CDS812 PSME/VAME: Douglas-fir/big huckleberry, R6 E 255-86
CDS813 PSME/VACA-COL: Douglas-fir/dwarf huckleberry-Colville, PNW-GTR-360, INT-236, INT-34
CDS814 PSME/VAME-COL: Douglas-fir/big huckleberry-Colville, PNW-GTR-360
CDS815 PSME/VACA: Douglas-fir/dwarf huckleberry, INT-114, INT-236
CDS821 PSME/VAME-BLUE: Douglas-fir/big huckleberry, R6 E TP 036-92
CDS822 PSME/VAGL: Douglas-fir/blue huckleberry, INT-114, INT-236, INT-34
CDS831 PSME/VACA: Douglas-fir/dwarf blueberry, PNW-GTR-359
CDS832 PSME/VAMY-WEN: Douglas-fir/velvetleaf huckleberry-Wenatchee, PNW- GTR-359
CDS833 PSME/VAMY/CARU: Douglas-fir/velvetleaf huckleberry/pinegrass, PNW- GTR-359

CDSD	Douglas-fir/shrub, dry, resource inventory, R6 E TP 036-92
CE	**Subalpine fir-Engelmann spruce closed forest**
CEC0	Subalpine fir-Engelmann spruce with associated conifers
CEC1	Subalpine fir-lodgepole pine
CEC2	Engelmann spruce-true fir
CEF0	Subalpine fir-spruce with forb-dominated ground vegetation
CEF1	Subalpine fir-spruce/beargrass
CEF111	ABLA2/XETE: Subalpine fir/beargrass, PNW-GTR-360, INT-236, INT-34, INT-114, DAUB '68
CEF2	Subalpine fir-spruce/twinflower
CEF211	ABLA2/LIBO2-O&C: subalpine fir/twinflower-Okanogan and Colville, R6 E 132-83, PNW-GTR-360, INT-34
CEF221	ABLA2/LIBO2: subalpine fir/twinflower, R6 E 255-86
CEF222	ABLA2/LIBO2L-WEN: subalpine fir/twinflower-Wenatchee, PNW-GTR-359
CEF231	ABAL2/LIBO2-ID: subalpine fir/twinflower-Idaho, INT-114
CEF3	Subalpine fir-spruce/tall forb
CEF311	ABLA2/STAM: subalpine fir/twisted stalk, R6 E 255-86
CEF321	ABLA2/LULA: subalpine fir/subalpine lupine, R6 E TP-001-88
CEF331	ABLA2/TRCA3-BLUE: subalpine fir/false bugbane-Blue Mountains, R6 E TP 036-92
CEF332	ABLA2/ATFI: subalpine fir/ladyfern, R6 NR TP-09-96
CEF333	ABLA2/SETR: subalpine fire/arrowleaf groundsel, R6 NR TP-09-96
CEF334	PIEN/ATFI: Englemann spruce/ladyfern, R6 NR TP-09-96
CEF335	PIEN/SETR: Engelmann spruce/arrowleaf groundsel R6 NR TP-09-96
CEF341	ABLA2/VASI: subalpine fir/Sitka valerian; R6 E TP 028-91
CEF4	Subalpine fir with short forbs
CEF411	ABLA2/POPU: subalpine fir/skunk-leaved polemonium, R6 E 255-86
CEF421	ABLA2/CLUN-RM: subalpine fir/queen's cup beadlily, Rocky Mountains, PNW- GTR-360, INT-236, INT-34, INT-114
CEF422	ABLA2/TRCA3: subalpine fir/false bugbane, PNW-GTR-359, PNW-GTR-360
CEF423	ABLA2/COCA: subalpine fir/bunchberry dogwood, PNW-GTR-360
CEF424	ABLA2/ARLA-POPU: subalpine fir/broadleaf arnica-skunkleaf polemonium, PNW-GTR-359
CEF431	ABLA2/HYRE: subalpine fir/hypnum, INT-114
CEF432	ABLA2/CABI: subalpine fir/marsh marigold, INT-114
CEF433	ABLA2/STAM-RM: subalpine fir/twisted stalk, INT-114, INT-34
CEF434	ABLA2/COOC: subalpine fir/goldthread, INT-114
CEF435	ABLA2/ARCO: subalpine fir/arnica, INT-114, INT-34
CEFW	Subalpine fir/forb, wet, resource inventory
CEFM	Subalpine fir/forb, mesic, resource inventory
CEG0	Subalpine fir-spruce with grass-dominated ground vegetation
CEG1	Subalpine fir-spruce/woodrush, resource inventory
CEG111	ABLA2/LUHI: subalpine fir/woodrush, INT-114, INT-236, INT-34
CEG121	ABLA2/LUHI-WEN: subalpine fir/woodrush, PNW-GTR-359

CEG2 Subalpine fir-spruce/sedge, R6 E TP 036-92
CEG211 ABLA2/CAGE: subalpine fir/elk sedge, INT-114, INT-34

CEG3 Subalpine fir-spruce/grass, resource inventory
CEG310 ABLA2/CARU-WEN: subalpine fir/pinegrass-Wenatchee, PNW-GTR-359
CEG311 ABLA2/CARU-O&C: subalpine fir/pinegrass-Okanogan and Colville, R6 E 132-83, PNW-GTR-359, PNW-GTR-360, INT-34
CEG312 ABLA2/CARU: subalpine fir/pinegrass, R6 E 255-86
CEG321 ABLA2/CARU-ID: subalpine fir/pinegrass-Idaho, INT-114
CEG322 ABLA2/CABI: subalpine fir/bluejoint grass, INT-114

CEM0 Subalpine fir, Engelmann spruce wetlands, resource inventory
CEM1 Subalpine fir, Engelmann spruce grass-sedge wetlands
CEM111 PIEN/CAEU: Engelmann spruce/widefruit sedge, R6 E TP-279-87
CEM121 PIEN/CADI: Engelmann spruce/soft-leaved sedge, R6 NR TP-09-96, INT-114
CEM2 Subalpine fir, Engelmann spruce forb wetlands
CEM211 PIEN/EQAR: Engelmann spruce/horsetail, R6 E 132-83, PNW-GTR-359, PNW-GTR-360, R6 NR TP-09-96, MISC#54
CEM212 PIEN/EQAR-ID: Engelmann spruce/horsetail-Idaho, INT-114, INT-34
CEM213 PIEN/GATR: Engelmann spruce/galium, INT-114, INT-34
CEM221 PIEN/EQAR-STREP: Engelmann spruce/horsetail/twisted stalk, R6 E TP-279-87
CEM222 PIEN/CLUN: Engelmann spruce/queen's cup beadlily, R6 E TP-279-87 INT-34

CEM3 Subalpine fir, Engelmann spruce short shrub wetlands
CEM311 PIEN/VAOC2/FORB: Engelmann spruce/bog blueberry/forb, R6 E TP-279-87
CEM312 PIEN/VAOC2/CAEU: Engelmann spruce/bog blueberry/widefruit sedge, R6 E TP-279-87

CERR Rocky subalpine fir with little ground vegetation
CERS Steep subalpine fir with little ground vegetation
CERX Rocky, steep subalpine fir, little ground vegetation
CES0 Subalpine fir-spruce with shrub-dominated ground vegetation
CES1 Subalpine fir-spruce/pachistima
CES111 ABLA2/PAMY-OKAN: subalpine fir/pachistima-Okanogan, R6 E 132-83
CES112 ABLA2/PAMY/CARU: subalpine fir/pachistima/pinegrass, PNW-GTR-359
CES113 ABLA2/PAMY-WEN: subalpine fir/pachistima-Wenatchee, PNW-GTR-359
CES121 ABLA2/PAMY-DAUB: subalpine fir/pachistima-Daub '68
CES131 ABLA2/CLUN: subalpine fir/queen's cup beadlily, R6 E 255-86
CES141 ABLA2/ACGL: subalpine fir/Douglas maple, INT-114
CES142 ABLA2/ALSI: subalpine fir/Sitka alder, INT-114
CES143 ABLA2/SPBE: subalpine fir/spirea, INT-114

CES2 Subalpine fir-spruce/rustyleaf-azalea; resource inventory
CES210 ABLA2/RHAL/XETE: subalpine fir/Cascade azalea/beargrass, PNW-GTR-360
CES211 ABLA2/RHAL: subalpine fir/Cascade azalea, R6 E 132-83, PNW-GTR-360, PNW-GTR-359
CES212 ABLA2/RHAL-OLY: subalpine fir/Cascade azalea-Olympic, R6 E TP-001-88
CES213 ABLA2/RHAL/LUHI: subalpine fir/Cascade azalea/woodrush, PNW-GTR-359

CES221 ABLA2/MEFE: subalpine fir/rustyleaf, R6 E 255-86, R6 E TP 036-92
CES231 ABLA2/MEFE-ID: subalpine fir/rustyleaf, INT-114, Daub '68, INT-34, INT-236
CES232 ABLA2/RIMO: subalpine fir/gooseberry, INT-114, INT-34

CES3 Subalpine fir-spruce/big huckleberries, resource inventory
CES311 ABLA2/VAME-BLUE: subalpine fir/big huckleberry-Blue Mountains, R6 AG 3-1, R6 E TP 036-92
CES312 ABLA2/VACCI: subalpine fir/huckleberries, R6 E 132-83
CES313 ABLA2/VAME-COL: subalpine fir/big huckleberry-Colville, PNW-GTR-360
CES314 ABLA2/CLUN-BLUE: subalpine fir/queen's cup beadlily-Blue Mountains, R6 E TP 036-92
CES315 ABLA2/VAME-WALLO: subalpine fir/big huckleberry-Wallowa, R6 E 255-86
CES321 ABLA2/VAME-OLY: subalpine fir/big huckleberry-Olympic, R6 E TP-001-88
CES331 ABLA2/VAGL: subalpine fir/blue huckleberry, INT-114, INT-34
CES341 ABLA2/VADE: subalpine fir/blueleaved huckleberry, PNW-GTR-359
CES342 ABLA2/VAME-WEN: subalpine fir/big huckleberry-Wenatchee, PNW-GTR-359

CES4 Subalpine fir-spruce/grouse huckleberry-pinemat manzanita; resource inventory
CES411 ABLA2/VASC-BLUES: subalpine fir/grouse huckleberry-Blue Mountains, R6 AG 3-1, R6 E TP 036-92
CES412 ABLA2/VASC-O&C: subalpine fir/grouse huckleberry-Okanogan and Colville, R6 E 132-83, PNW-GTR-360
CES413 ABLA2/VASC/CARU-OKAN: subalpine fir/grouse huckleberry/pinegrass-Okanogan, R6 E 132-83, PNW-GTR-359
CES414 ABLA2/LIBO2: subalpine fir/twinflower, R6 E TP 036-92
CES415 ABLA2/VASC/POPU: subalpine fir/grouse huckleberry/polymonium, R6 E 255-86
CES421 ABLA2/VASC-DAUB: subalpine fir/grouse huckleberry, INT-34, INT-236, Daub '68, INT-114
CES422 ABLA2/VACA: subalpine fir/dwarf huckleberry, PNW-GTR-359, PNW- GTR-360, INT-236, INT-34, INT-114
CES423 ABLA2/RULA: subalpine fir/trailing bramble, PNW-GTR-359
CES424 ABLA2/VASC/ARLA: subalpine fir/grouse huckleberry/broadleaf arnica, PNW-GTR-359
CES425 ABLA2/VASC/LUHI: subalpine fir/grouse huckleberry/woodrush, PNW- GTR-359
CES426 ABLA2/VASC-WEN: subalpine fir/grouse huckleberry-Wenatchee, PNW- GTR-359

CES5 Subalpine fir/snowberry-dogwood-mockorange
CES511 PIEN/COST: Engelmann spruce/red-osier dogwood, R6 NR TP-09-96, R4 ECOL-8901, MISC#54

CES6 Subalpine fir-spruce/mountain heath-laborador tea
CES611 ABLA2/PHEM: subalpine fir/red mountain heath, R6 E 132-83
CES621 ABLA2/JUCO4: subalpine fir/common juniper, R6 E TP-001-88
CES631 ABLA2/JUCO4-ID: subalpine fir/common juniper, INT-114

CES7 Subalpine fir-spruce/devil's club, INT-34, INT-236

CEX104 Malheur (04) 2A: slope less than 30 percent, CES3 11, CES4 11
CEX204 Malheur (04) 2B: slope 30-70 percent, CES3 11, CES4 11

CF **Fir: silver, noble**

CFC0 Silver or noble fir with associated conifers
CFC1 Silver fir-mountain hemlock
CFC151 ABAM-TSME/XETE: silver fir-mountain hemlock/beargrass, Dyrn '74

CFC2 Silver fir-western hemlock
CFC251 ABAM-TSHE/RHMA-GASH: silver fir-western hemlock/rhododendron-salal, R6 E 100-82, R6 E 257-86
CFC3 Silver fir-white, grand fir
CFC311 ABAM-ABGR/SMST: silver fir-grand fir/false solomonseal, R6 E 257-86

CFC4 Silver fir-Alaska-cedar, Alaska-cedar dominant
CFC411 ABAM-CHNO/VAAL: silver fir-Alaska-cedar/Alaska huckleberry, MONO#19
CFC412 CHNO/VAAL: Alaska-cedar/Alaska huckleberry, MONO#19

CFF0 Silver or noble fir with forb-dominated ground vegetation
CFF1 Silver or noble fir/oxalis-twisted stalk-tiarella-clintonia
CFF111 ABAM/OXOR-OLY: silver fir/oxalis, Olympic, R6 E TP-001-88
CFF141 ABAM/CLUN-WSPR: silver fir/clintonia-Warms Springs, W.Spr
CFF151 ABAM/CLUN: silver fir/queen's cup beadlily, Dyrn '74
CFF152 ABAM/TIUN: silver fir/coolwort foamflower, R6 E 100-82, R6 E 130-83*, R6 E 257-86
CFF153 ABAM/OXOR: silver fir/oxalis, R6 E 100-82, R6 E 257-86
CFF154 ABAM/TIUN-STRO: silver fir/foamflower-twisted stalk, R6 E TP 028-91
CFF161 ABAM/TIUN: silver fir/foamflower, MONO#19
CFF162 ABAM/TITRU: silver fir/oneleaf foamflower, PNW-GTR-359

CFF2 Silver or noble fir/vanillaleaf
CFF211 ABAM/ACTR-TIUN: silver fir/vanillaleaf-foamflower, R6 E TP-001-88
CFF250 ABAM/ACTR-MBS: silver fir/vanillaleaf-Mount Baker, R6 E TP-028-91
CFF251 ABPR/ACTR: noble fir/vanillaleaf, Dyrn '74
CFF252 ABAM/ACTR: silver fir/vanillaleaf, Dyrn '74
CFF253 ABAM/ACTR-CLUN: silver fir/vanillaleaf-beadlily, R6 E 130-83
CFF254 ABAM/ACTR-WEN: silver fir/vanillaleaf-Wenatchee, PNW-GTR-359

CFF3 Silver or noble fir/beargrass, resource inventory
CFF311 ABAM/XETE-OLY: silver fir/beargrass-Olympic, R6 E TP-001-88, (Olympic only)
CFF312 ABAM/XETE-MBS: silver fir/beargrass-Mount Baker, R6 E TP-028-91, MONO #19, (formerly CFF311)
CFF321 ABAM/XETE-WSPR: silver fir/beargrass-Warm Springs, W.Spr.

CFF4 Silver or noble fir/Oregon anemone, wild ginger, pyrola
CFF450 ABAM/RUPE-BLSP: silver fir/five-leaved bramble-deerfern, R6 E TP-028-91

CFF5 Silver or noble fir/twinflower
CFF6 Silver or noble fir/swordfern
CFF611 ABAM/POMU: silver fir/swordfern, R6 E TP-001-88
CFF612 ABAM/POMU-OXOR: silver fir/swordfern-oxalis, R6 E TP-001-88

CFF911 ABAM/(DEP): silver fir/depauperate, R6 E TP-001-88

CFFM	Silver fir/forbs, mesic, resource inventory
CFFS	Silver fir/forbs, shrubs, resource inventory
CFGO	Silver fir/grass or grasslike
CFM0	Silver or noble fir wetlands
CFM1	Silver or noble fir/skunk cabbage
CFM111	ABAM/LYAM: silver fir/skunk cabbage, R6 E TP-001-88, R6 E TP-028-91
CFRR	Rocky silver or noble fir, rocky with little ground vegetation
CFRS	Steep silver or noble fir, rocky, steep with little ground vegetation
CFRX	Rocky, steep silver or noble fir with scant ground vegetation
CFS0	Silver or noble fir with shrub dominated ground vegetation
CFS1	Silver or noble fir/Oregongrape-salal, resource inventory
CFS110	ABAM/BENE-MBS: silver fir/Oregongrape-Mount Baker, R6 E TP 028-91
CFS151	ABAM/BENE: silver fir/dwarf Oregongrape, R6 E 100-82, R6 E 130-83*, R6 E 257-86, MONO#19
CFS152	ABAM/GASH-GP: silver fir/salal-Gifford Pinchot, R6 E 130-83, MONO#19
CFS154	ABAM/GASH-BENE: silver fir/salal-Oregongrape, RE TP-001-88, R6 E TP-028-91
CFS155	ABAM/GASH/BLSP: silver fir/salal/deerfern, R6 E TP-001-88
CFS156	ABAM/GASH/OXOR: silver fir/salal/oxalis, R6 E TP-001-88
CFS2	Silver or noble fir/big huckleberries, fool's huckleberry, pachistima
CFS211	ABAM/VAME/XETE-OLY: silver fir/big huckleberry/beargrass-Olympic, R6 E TP-001-88, (Olympic only)
CFS212	ABAM/VAAL-OLY: silver fir/Alaska huckleberry-Olympic, R6 E TP-001-88, (Olympic only)
CFS213	ABAM/VAAL/ERMO: silver fir/Alaska huckleberry/avalanche lily, R6 E TP-001-88
CFS214	ABAM/VAAL/XETE-OLY: silver fir/Alaska huckleberry/beargrass-Olympic, R6 E TP-001-88, (Olympic only)
CFS215	ABAM/VAAL/TIUN: silver fir/Alaska huckleberry/foamflower, R6 E TP-001-88
CFS216	ABAM/VAAL-BENE: silver fir/Alaska huckleberry-Oregongrape, R6 E TP-001-88, R6 E TP 028-91, MONO#19
CFS217	ABAM/VAAL/OXOR: silver fir/Alaska huckleberry/oxalis, R6 E TP-001-88
CFS218	ABAM/VAAL/CLUN-OLY: silver fir/Alaska huckleberry/queen's cup-Olympic, R6 E TP-001-88, (Olympic only)
CFS219	ABAM/VAAL/LIBO2: silver fir/Alaska huckleberry/twinflower, R6 E TP-001-88
CFS220	ABAM/VAAL-RHAL: silver fir/Alaska huckleberry-white rhododendron, R6 E TP-001-88
CFS221	ABAM/VAME/VASI: silver fir/big huckleberry/Sitka valerian, R6 E TP 028-91
CFS222	ABAM/VAME/STRO: silver fir/big huckleberry/twisted-stalk, R6 E TP 028-91
CFS223	ABAM/VAME-VAAL: silver fir/big huckleberry-Alaska huckleberry, R6 E TP 028-91
CFS224	ABAM/VAME: silver fir/big huckleberry, R6 E TP 028-91
CFS225	ABAM/VAAL/MADI2: silver fir/Alaska huckleberry/false lily-of-the-valley, R6 E TP 028-91

CFS226 ABAM/VAAL/TIUN-MBS: silver fir/Alaska huckleberry/foamflower-Mount Baker, R6 E TP-028-91

CFS228 ABAM/VAAL/PYSE: silver fir/Alaska huckleberry/pyrola, R6 E TP 028-91

CFS229 ABAM/VAME/PYSE: silver fir/big huckleberry/pyrola, R6 E TP 028-91

CFS230 ABAM/VAAL-GASH-MBS: silver fir/Alaska huckleberry-salal-Mount Baker, R6 E TP 028-91

CFS231 ABAM/VAAL/POMU: silver fir/Alaska huckleberry/swordfern, R6 E TP 028-91

CFS232 ABAM/VAAL-WEN: silver fir/Alaska huckleberry-Wenatchee, PNW-GTR-359

CFS233 ABAM/VAME/CLUN-WEN: silver fir/big huckleberry/clintonia-Wenatchee, PNW-GTR-359

CFS234 ABAM/VAME-PYSE: silver fir/big huckleberry-pyrola, PNW-GTR-359

CFS241 ABAM/VAAL-RAIN: silver fir/Alaska huckleberry-Mount Rainier, MONO#19

CFS242 ABAM/VAAL-RUPE: silver fir/Alaska huckleberry-strawberryleaf, MONO#19

CFS251 ABAM/VAME/XETE: silver fir/big huckleberry/beargrass, R6 E 100-82, R6 E 130-83*, R6 E 257-86

CFS252 ABAM/VAME/XETE-MBS: silver fir/big huckleberry/beargrass-Mount Baker, R6 E TP-028-91 (formerly CFS211)

CFS253 ABAM/VAAL/COCA: silver fir/Alaska huckleberry/bunchberry, R6 E 100-82, R6 E 257-86

CFS254 ABAM/MEFE: silver fir/fool's huckleberry, R6 E 100-82, R6 E 130-83*, R6 E 257-86, R6-NR-TP-10-96

CFS255 ABAM/VAAL-GASH: silver fir/Alaska huckleberry-salal, R6 E 100-82, R6 E 130-83*, R6 E 257-86

CFS256 ABAM/VAME/CLUN: silver fir/big huckleberry/ beadlily, R6 E 100-82, R6 E 130-83*, R6 E 257-86

CFS257 ABAM/VAAL: silver fir/Alaska huckleberry, R6 E 130-83, R6 NR TP-10-96

CFS258 ABAM/VAAL-MBS: silver fir/Alaska huckleberry-Mount Baker, R6 E TP-028-91, (formerly CFS212)

CFS259 ABAM/VAAL/XETE-MBS: silver fir/Alaska huckleberry, beargrass-Mount Baker, R6 E TP-028-91, (formerly CFS214)

CFS260 ABAM/VAAL/CLUN-MBS: silver fir/Alaska huckleberry/queen's cup beadlily-Mount Baker, R6 E TP-028-91, (formerly CFS214)

CFS3 Silver or noble fir/devil's club, resource inventory

CFS311 ABAM/OPHO-OLY: silver fir/devil's club-Olympic, R6 E TP-001-88

CFS321 ABAM/OPHO-RAIN: silver fir/devil's club-Mount Rainier, MONO#19

CFS351 ABAM/OPHO: silver fir/devil's club, R6 E 100-82, R6 E 130-83*, PNW-GTR-359, R6-NR-TP-10-96, R6 E 257-86

CFS352 ABAM/OPHO-VAAL: silver fir/devil's club-Alaska huckleberry, R6 E TP-028-91

CFS4 Silver or noble fir/grouse huckleberry (*Vaccinium scoparium*)

CFS411 ABAM/RULA: silver fir/tailing bramble, MONO#19

CFS412 ABAM/ERMO: silver fir/erythronium, MONO#19

CFS413 ABAM/RULA-WEN: silver fir/trailing bramble-Wenatchee, PNW-GTR-359

CFS5	Silver or noble fir/Cascade's azalea, resource inventory
CFS541	ABAM/MEFE: silver fir/rustyleaf, MONO#19
CFS542	ABAM/MEFE-WEN: silver fir/rustyleaf-Wenatchee, PNW-GTR-359
CFS550	ABAM/RHAL-GP: silver fir/Cascade's azalea-Gifford Pinchot, R6 E 130-83, MONO#19
CFS551	ABAM/RHAL/XETE: silver fir/azalea/beargrass, R6 E 100-82, R6 E 257-86
CFS552	ABAM/RHAL/CLUN: silver fir/azalea/beadlily, R6 E 100-82, R6 E 257-86
CFS553	ABAM/RHAL-OKAN: silver fir/Cascade's azalea, Okanogan, R6 E 132-83
CFS554	ABAM/RHAL-VAME: silver fir/Cascade's azalea-big huckleberry, R6 E TP 028-91
CFS555	ABAM/RHAL-VAAL: silver fir/Cascade's azalea-Alaska huckleberry, R6 E TP 028-91
CFS556	ABAM/RHAL-VAME-WEN: silver fir/Cascades azalea-big huckleberry-Wenatchee, PNW-GTR-359
CFS558	ABAM/PAMY: silver fir/pachistima, R6 E 132-83
CFS6	Silver or noble fir/rhododendron, vine maple, resource inventory
CFS611	ABAM/RHMA-OLY: silver fir/rhododendron-Olympic, R6 E TP-001-88
CFS612	ABAM/RHMA-VAAL: silver fir/rhododendron-Alaska huckleberry, R6 E TP- 001-88
CFS621	ABAM/ACCI: silver fir/vine maple, PNW-GTR-359
CFS651	ABAM/ACCI/TIUN: silver fir/vine maple/foamflower, R6 E 100-82, R6 E 257-86
CFS652	ABAM/RHMA-BENE: silver fir/rhododendron-Oregongrape, R6 E 100-82, R6 E 257-86
CFS653	ABAM/RHMA/XETE: silver fir/rhododendron/beargrass, R6 E 100-82, R6 E 257-86
CFS654	ABAM/RHMA-VAAL/COCA: silver fir/rhododendron-Alaska huckleberry/-bunchberry, R6 E 100-82, R6 E 257-86
CFSC	Silver fir/shrubs, cool, resource inventory
CFSD	Silver fir/shrubs, dry, resource inventory
CFSF	Silver fir/shrubs-forbs, coastal, resource inventory
CFSM	Silver fir/shrubs, mesic, resource inventory
CH	**Hemlock, western**
CHC0	Western hemlock with important associated conifers
CHC1	Western hemlock-Port-Orford-cedar
CHC2	Western hemlock-Douglas-fir: western hemlock/shrub, dry, resource inventory
CHC211	TSHE-PSME/COCO: western hemlock-Douglas-fir/hazel, steep shallow soil, Willamette
CHC212	TSHE-PSME/HODI: western hemlock-Douglas-fir/oceanspray, R6 E 232-86, R6 E 230-86
CHC213	TSHE-PSME-ARME: western hemlock-Douglas-fir-madrone, R6 E 230-86
CHC3	Western hemlock-white or grand fir
CHC311	TSHE-ABGR/CLUN: western hemlock-grand fir/queen's cup beadlily, R6 E TP- 004-88, R6-NR-TP-10-96

CHC4 Western hemlock-western redcedar
CHC5 Western hemlock-silver fir
CHC551 TSHE-ABAM/RHMA-BENE: western hemlock-silver fir/rhododendron/-Oregongrape, Dyrn '74
CHC552 TSHE-ABAM/RHMA/LIBO2: western hemlock-silver fir/rhododendron/-twinflower, Dyrn '74
CHC553 TSHE-ABAM/LIBO2: western hemlock-silver fir/twinflower, Dyrn '74

CHC6 Western hemlock-incense-cedar

CHF0 Western hemlock with forb-dominated ground vegetation
CHF1 Western hemlock/swordfern/oxalis, resource inventory
CHF111 TSHE/OXOR-WILL: western hemlock/oxalis-Willamette, R6 E 257-86

CHF112 TSHE/OXOR-OLY: western hemlock/oxalis-Olympic, R6 E TP-001-88
CHF121 TSHE/OXOR-COAST: western hemlock/oxalis-coastal, R6 E 220-86
CHF122 TSHE/POMU-COAST: western hemlock/swordfern-coastal, R6 E 220-86
CHF123 TSHE/POMU-MTH: western hemlock/swordfern-Mount Hood, R6 E 232-86
CHF124 TSHE/POMU-OXOR: western hemlock/swordfern-oxalis, R6 E 232-86, R6 E 230-86, R6-NR-TP-10-96
CHF125 TSHE/POMU-GP: western hemlock/swordfern-Gifford Pinchot, R6 E 230-86, R6-NR-TP-10-96, MONO#19
CHF131 TSHE/POMU-OXOR-OLY: western hemlock/swordfern/oxalis-Olympic R6 E TP- 001-88
CHF132 TSHE/POMU-TITR-OLY: western hemlock/swordfern-foamflower-Olympic, R6 E TP-001-88, (Olympic only)
CHF133 TSHE/POMU-GASH: western hemlock/swordfern-salal, R6 E TP 028-91
CHF134 TSHE/POMU-BENE: western hemlock/swordfern-Oregongrape, R6 E TP 028-91
CHF135 TSHE/POMU-TITR-MBS: western hemlock/swordfern-foamflower-Mount Baker, R6 E TP-028-91, (formerly CHF132)
CHF151 TSHE/POMU-WILL: western hemlock/swordfern-Willamette, R6 E 257-86

CHF2 Western hemlock/vanillaleaf-foamflower: western hemlock/forb, dry, resource inventory

CHF211 TSHE/ACTR-OLY: western hemlock/vanillaleaf-Olympic, R6 E TP-001-88
CHF221 TSHE/ACTR: western hemlock/vanillaleaf, R6 E 232-86, R6 E 230-86, R6 E 257-86, R6-NR-TP-10-96, MONO#19
CHF222 TSHE/TITR: western hemlock/foamflower, R6 E 230-86
CHF223 TSHE/ACTR-WEN: western hemlock/vanillaleaf-Wenatchee, PNW-GTR-359
CHF250 TSHE/TITR-GYDR: western hemlock/foamflower-oakfern, R6 E TP 028-91

CHF3 Western hemlock/beadlily-twinflower: western hemlock/forb, mesic, resource inventory
CHF311 TSHE/CLUN: western hemlock/queen's cup beadlily, PNW-GTR-360, INT-236, INT-34, XB-0936
CHF312 TSHE/ARNU3: western hemlock/wild sarsparilla, PNW-GTR-360
CHF313 TSHE/ASCA3: western hemlock/ginsing, PNW-GTR-359, INT-236
CHF321 TSHE/LIBO2: western hemlock/twinflower, R6 E 257-86

CHF4 Western hemlock with fern ground vegetation
CHF421 TSHE/ATFI: western hemlock/ladyfern, R6 E 230-86
CHF422 TSHE/GYDR: western hemlock/oak fern, PNW-GTR-360, INT-236

CHF5 Western hemlock/beargrass
CHF511 TSHE/XETE-OLY: western hemlock/beargrass-Olympic, R6 E TP-001-88
CHF521 TSHE/XETE-COL: western hemlock/beargrass-Colville, PNW-GTR-360
CHF531 TSHE/XETE-WSPR: western hemlock/beargrass-Warm Springs, W.Spr.

CHF911 TSHE/(DEP): western hemlock/depauperate, R6 E TP-001-88

CHH0 Western hemlock with important associated hardwoods
CHH1 Western hemlock/tanoak-laurel
CHH2 Western hemlock/bigleaf maple
CHH3 Western hemlock/chinkapin
CHH351 TSHE-CACH: western hemlock/chinkapin, Dyrn '74

CHH4 Western hemlock/alder
CHH5 Western hemlock/oak

CHM0 Western hemlock wetlands (moist to wet soil)
CHM1 Western hemlock/skunk cabbage wetlands
CHM111 TSHE/LYAM-OLY: western hemlock/skunk cabbage-Olympic, R6 E TP-001-88
CHM121 TSHE/LYAM: western hemlock/skunk cabbage, R6 E 232-86, R6 E 230-86, PNW-GTR-359, R6 NR-TP-10-96

CHS0 Western hemlock with shrub-dominated ground vegetation
CHS1 Western hemlock/low shrub, salal, Oregongrape, resource inventory
CHS111 TSHE/GASH-WILL: western hemlock/salal-Willamette, R6 E 257-86
CHS112 TSHE/RHPU/GASH: western hemlock/cascara/salal-flat deep soil, Willa
CHS113 TSHE/BENE/OXOR: western hemlock/Oregongrape/oxalis, R6 E 257-86
CHS114 TSHE/BENE/ACTR: western hemlock/Oregongrape/vanillaleaf, R6 E 257-86
CHS121 TSHE/BENE-COAST: western hemlock/Oregongrape-coastal, R6 E 220-86
CHS122 TSHE/BENE-GASH-COAST: western hemlock/Oregongrape-salal-coastal, R6 E 220-86
CHS123 TSHE/GASH-COAST: western hemlock/salal-coastal, R6 E 220-86
CHS124 TSHE/BENE-GASH: western hemlock/Oregongrape-salal, R6 E 232-86, R6 E 257-86
CHS125 TSHE/BENE: western hemlock/Oregongrape, R6 E 232-86, R6 E 230-86, R6 E 257-86
CHS126 TSHE/BENE/POMU: western hemlock/Oregongrape/swordfern, R6 E 232-86, R6 E 230-86
CHS127 TSHE/BENE-GASH-GP: western hemlock/Oregongrape-salal-Gifford Pinchot, R6 E 230-86
CHS128 TSHE/GASH-GP: western hemlock/salal-Gifford Pinchot, R6 E 230-86, MONO#19
CHS129 TSHE/GASH-MBS: western hemlock/salal-Mount Baker, R6 E TP-028-91, (formerly CHS131)
CHS130 TSHE/BENE-MBS: western hemlock/Oregongrape-Mount Baker, R6 E TP-028-91, (formerly CHS138)
CHS131 TSHE/GASH-OLY: western hemlock/salal-Olympic, R6 E TP-001-88, (Olympic only)
CHS132 TSHE/GASH/XETE: western hemlock/salal/evergreen huckleberry, R6 E TP-001-88, R6 E TP-028-91

CHS133 TSHE/GASH-VAOV2: western hemlock/salal-beargrass, R6 E TP-001-88
CHS134 TSHE/GASH-HODI: western hemlock/salal-oceanspray, R6 E TP-001-88
CHS135 TSHE/GASH-BENE: western hemlock/salal-Oregongrape, R6 E TP-001-88, R6 E TP 028-91
CHS136 TSHE/GASH/OXOR: western hemlock/salal/oxalis, R6 E TP-001-88
CHS137 TSHE/GASH/POMU: western hemlock/salal/swordfern, R6 E TP-001-88
CHS138 TSHE/BENE-OLY: western hemlock/Oregongrape-Olympic, R6 E TP-001-88
CHS139 TSHE/BENE/POMU-OLY: western hemlock/Oregongrape/swordfern-Olympic, R6 E TP-001-88
CHS140 TSHE/GASH-VAME: western hemlock/salal-big huckleberry, R6 E TP 028-91
CHS141 TSHE/BENE/CHME: western hemlock/Oregongrape/prince's pine, R6 E TP 028-91
CHS142 TSHE/BENE-WEN: western hemlock/Oregongrape-Wenatchee, PNW-GTR-359
CHS143 TSHE/PAMY/CLUN: western hemlock/pachistima/clintonia, PNW-GTR-359
CHS144 TSHE/ARNE: western hemlock/pinemat manzanita, PNW-GTR-359

CHS2 Western hemlock/vine maple
CHS211 TSHE/ACCI: western hemlock/vine maple, W.Spr.
CHS221 TSHE/ACCI-GASH-COAST: western hemlock/vine maple-salal-coastal, R6 E 220-86
CHS222 TSHE/ACCI/POMU-COAST: western hemlock/vine maple/swordfern-coast, R6 E 220-86
CHS223 TSHE/ACCI/ACTR: western hemlock/vine maple/vanillaleaf, R6 E 232-86
CHS224 TSHE/CONU/ACTR: western hemlock/dogwood/vanillaleaf, R6 E 230-86
CHS225 TSHE/ACCI/ACTR-WEN: western hemlock/vine maple/vanillaleaf-Wenatchee, PNW-GTR-359
CHS226 TSHE/ACCI/ASCA3: western hemlock/vine maple/ginsing, PNW-GTR-359
CHS227 TSHE/ACCI/CLUN: western hemlock/vine maple/clintonia, PNW-GTR-359
CHS251 TSHE/ACCI-BENE: western hemlock/vine maple-Oregongrape, R6 E TP 028-91

CHS3 Western hemlock/rhododendron, resource inventory

CHS311 TSHE-ABAM/RHMA-WILL: western hemlock/silver fir/rhododendron-rolling deep, Willamette

CHS312 TSHE/RHMA-ACCI-WILL: western hemlock/rhododendron-vine maple-steep deep, Willamette

CHS313 TSHE/ACCI-RHMA-WILL: western hemlock/vine maple-rhododendron-unstable-Willamette

CHS321 TSHE/RHMA-BENE-COAST: western hemlock/rhododendron-Oregongrape-coast, R6 E 220-86

CHS322 TSHE/RHMA-GASH-COAST: western hemlock/rhododendron-salal-coast, R6 E 220-86

CHS323 TSHE/RHMA/POMU-COAST: western hemlock/rhododendron/swordfern-coast, R6 E 220-86

CHS324 TSHE/RHMA-VAOV2-COAST: western hemlock/rhododendron-evergreen huckleberry-coast, R6 E 220-86

CHS325 TSHE/RHMA/XETE-MTH: western hemlock/rhododendron/beargrass-Mount Hood, R6 E 232-86

CHS326 TSHE/RHMA-VAAL/COCA: western hemlock/rhododendron/Alaska huckleberry/bunchberry, R6 E 232-86, R6 E 257-86

CHS327 TSHE/RHMA-GASH-MTH: western hemlock/rhododendron-salal-Mount Hood, R6 E 232-86

CHS328 TSHE/RHMA-BENE-MTH: western hemlock/rhododenron-Oregongrape-Mount Hood, R6 E 232-86

CHS329 TSHE/RHMA-WSPR: western hemlock/rhododendron-Warm Springs, W.Spr.

CHS331 TSHE/RHMA-OLY: western hemlock/rhododendron-Olympic, R6 E TP-001-88

CHS332 TSHE/RHMA/XETE-OLY: western hemlock/rhododendron-Olympic, R6 E TP-001-88

CHS333 TSHE/RHMA-BENE-OLY: western hemlock/rhododendron-Oregongrape-Olympic, R6 E TP-001-88

CHS334 TSHE/RHMA-GASH-OLY: western hemlock/rhododendron-salal-Olympic, R6 E TP-001-88

CHS335 TSHE/RHMA/POMU-OLY: western hemlock/rhododendron/swordfern-Olympic, R6 E TP-001-88

CHS351 TSHE/RHMA-GASH-WILL: western hemlock/rhododendron-salal-Willamette, R6 E 257-86

CHS352 TSHE/RHMA-BENE-WILL: western hemlock/rhododendron-Oregongrape-Willamette, R6 E 257-86

CHS353 TSHE/RHMA/XETE-WILL: western hemlock/rhododendron/beargrass-Willamette, R6 E 257-86

CHS354 TSHE/RHMA/OXOR: western hemlock/rhododendron/oxalis, R6 E 257-86

CHS355 TSHE/RHMA/LIBO2: western hemlock/rhododendron/twinflower, R6 E 257-86

CHS4 Western hemlock/thimbleberry-salmonberry: western hemlock/shrubs, mesic, resource inventory

CHS411 TSHE/RUPE: western hemlock/five-leaved bramble, PNW-GTR-360

CHS421 TSHE/RUSP-COAST: western hemlock/salmonberry, coastal, R6 E 220-86

CHS422 TSHE/RUSP-ACCI-COAST: western hemlock/salmonberry/vine maple-coast, R6 E 220-86

CHS423 TSHE/RUSP-GASH-COAST: western hemlock/salmonberry/salal-coastal, R6 E 220-86

CHS5 Western hemlock/devil's club

CHS511 TSHE/OPHO-WILL: western hemlock/devil's club-Willamette, R6 E 257-86

CHS512 TSHE/OPHO-OLY: western hemlock/devil's club-Olympic, R6 E TP-001-88

CHS513 TSHE/OPHO-ATFI: western hemlock/devil's club-ladyfern, R6 E TP 028-91

CHS514 TSHE/OPHO-RAIN: western hemlock/devil's club-Mount Rainier, MONO#19

CHS521 TSHE/OPHO-COAST: western hemlock/devil's club-coastal, R6 E 220-86

CHS522 TSHE/OPHO/OXOR: western hemlock/devil's club/oxalis, R6 E 232-86, R6 NR-TP-10-96

CHS523 TSHE/OPHO/SMST: western hemlock/devil's club/solomon seal, R6 E 232-86, R6 NR-TP-10-96

CHS524 TSHE/OPHO/POMU: western hemlock/devil's club/swordfern, R6 E 230-86, R6 NR-TP-10-96

CHS6 Western hemlock/big huckleberries

CHS610 TSHE/VAOV2-COAST: western hemlock/evergreen huckleberry-coastal, R6 E 220-86

CHS611 TSHE/VAAL-OPHO: western hemlock/Alaska huckleberry-devil's club, R6 E 232-86

CHS612 TSHE/VAME/XETE: western hemlock/big huckleberry/beargrass, R6 E 232-86

CHS613 TSHE/VAAL/OXOR: western hemlock/Alaska huckleberry/oxalis, R6 E 232-86, R6 E 230-86

CHS614 TSHE/VAAL-GASH: western hemlock/Alaska huckleberry-salal, R6 E 232-86, R6 E 230-86

CHS615 TSHE/VAAL/COCA: western hemlock/Alaska huckleberry/bunchberry, R6 E 236-86, R6 E 230-86, R6 E 257-86, R6 NR-TP-10-96

CHS621 TSHE/VAAL: western hemlock/Alaska huckleberry, R6 E TP-001-88, R6 E TP 028-91

CHS622 TSHE/VAAL/XETE: western hemlock/Alaska huckleberry/beargrass, R6 E TP-001-88, R6 E TP 028-91

CHS623 TSHE/VAAL/OXOR-OLY: western hemlock/Alaska huckleberry/oxalis-Olympic, R6 E TP-001-88

CHS624 TSHE/VAAL-GASH-OLY: western hemlock/Alaska huckleberry-salal-Olympic, R6 E TP-001-88

CHS625 TSHE/VAAL/POMU: western hemlock/Alaska huckleberry/swordfern, R6 E TP 028-91

CHS626 TSHE/VAAL-BENE: western hemlock/Alaska huckleberry-Oregongrape, R6 E TP 028-91

CHS7 Western hemlock/Cascade azalea, menziesia, shepherdia

CHS711 TSHE/MEFE: wetern hemlock/rusty menziesia, PNW-GTR-360, INT-236

CHS8 Western hemlock/oak, chapparal

CHSC	Western hemlock/rhododendron, cool, resource inventory
CHSD	Western hemlock/salal-Oregongrape, dry, resource inventory
CHSF	Western hemlock/shrub/oxalis, resource inventory
CHSM	Western hemlock/rhododendron, mesic, resource inventory
CHZ412	Siuslaw (12): conifer-hardwood, hemlock, cedar, spruce dominant
CHZ612	Siuslaw (12): conifer, hemlock, cedar, spruce dominant
CJ	**Juniper**
CJC0	Juniper with associated conifers
CJG0	Juniper with grass-dominated ground vegetation, resource inventory
CJG1	Juniper/wheatgrass
CJG111	JUOC/FEID-AGSP: juniper/fescue-wheatgrass, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92
CJG112	JUOC/AGSP-POSA3: juniper/wheatgrass-bluegrass, Dris '64
CJG2	Juniper/fescue
CJRR	Juniper on a very rocky site
CJRS	Juniper on steep slopes and little ground vegetation
CJRX	Juniper with rocks or steep slopes with minimal ground vegetation
CJS0	Juniper with shrub-dominated ground vegetation
CJS1	Juniper/low sagebrush, resource inventory, R6 E TP 036-92
CJS111	JUOC/ARAR/AGSP-FEID: juniper/low sage/wheatgrass-fescue, R6 AG 3-1
CJS112	JUOC/ARAR/FEID: juniper/low sage/Idaho fescue, R6 E 79-004
CJS2	Juniper/big sagebrushes, resource inventory, R6 E TP 036-92
CJS211	JUOC/ARTR/AGSP-FEID: juniper/big sage/wheatgrass-fescue, R6 AG 3-1
CJS212	JUOC/ARTR/FEID-AGSP-NORTH: juniper/sage/fescue-wheatgrass, R6 E 133-83
CJS213	JUOC/ARTR/AGSP-POSA-SOUTH: juniper/sage/wheatgrass-bluegrass, R6 E 133-83
CJS221	JUOC/ARTR/AGSP: juniper/sage/wheatgrass, Dris '64
CJS222	JUOC/ARTR/AGSP-CHDO: juniper/sage/wheatgrass-chaenactis, Dris '64
CJS223	JUOC/ARTR/AGSP-ASLE: juniper/sage/wheatgrass/astragalus, Dris '64
CJS224	JUOC/ARTR/FEID: juniper/sage/fescue, Dris '64
CJS225	JUOC/ARTR/FEID-LUP: juniper/sage/fescue-lupine, Dris '64
CJS226	JUOC/ARTR/AGSP-FEID-FLAT: juniper/sage/bunchgrass, flat, R6 E 133-83
CJS231	JUOC/ARTR-HODU/AGSP-BASA, S.CAN: juniper/sage-rock spirea, R6 E 133-83
CJS232	JUOC/ARTR-CHVI/FEID-BASA, N.CAN: juniper/sage rabbitbrush, R6 E 133-83
CJS236	JUOC/ARTR-PUTR: juniper/sage-bitterbrush, Dris '64
CJS291	JUOC/CHVI-ARTR/AGCR: juniper rabbitbrush-sage/crestedwheat, R6 E 133-83
CJS292	JUOC/CHVI-ARTR/AGIN: juniper/rabbitbrush-sage/beardedwheat, R6 E 133-83

CJS3	Juniper/bitterbrush
CJS311	JUOC/PUTR/AGSP-FEID: juniper/bitterbrush/bunchgrass, R6 E 104-85
CJS321	JUOC/PUTR/FEID-AGSP: juniper/bitterbrush/fescue-wheatgrass; R6 E TP 036-92
CJS4	Juniper/mountain-mahogany, R6 E TP 036-92
CJS8	Juniper/stiff sage scabland, R6 E TP 036-92
CJS811	JUOC/ARRI-SCAB: juniper/stiff sage scabland, R6 AG 3-1
CJSB	Juniper biscuit-swale system
CJSB11	JUOC/ARTR/FEID-AGSP, MOUND: juniper/sage/fescue, mound, R6 E 133-83
CL	**Lodgepole pine, shore pine (climax or stable)**
CLC0	Lodgepole pine with associated conifer trees; lodgepole-whitebark pine, resource inventory
CLC1	Lodgepole-whitebark pine alpine
CLC111	PICO-PIAL/PELA: lodgepole-whitebark pine/penstemon, R6 E 79-004
CLC112	PIC0-PIAL/ARCO2: lodgepole-whitebark pine/sandwort, R6 E 79-004
CLC2	Lodgepole-Douglas-fir serpentine, juniper, manzanita
CLC3	Lodgepole, ponderosa
CLC4	Lodgepole, Douglas-fir
CLC5	Lodgepole, mountain hemlock
CLF0	Lodgepole pine with forb-dominated ground vegetation
CLF1	Lodgepole pine/forbs less than 20 inches tall
CLF111	PICO/FORB: lodgepole/forb (prince's pine, lupine), R6 E 79-005
CLF211	PICO/LIBO2: lodgepole/twinflower, R6 E 255-86, INT-34
CLG0	Lodgepole pine with grass-dominated ground vegetation
CLG1	Lodgepole pine/bunchgrass
CLG111	PICO/FEID: lodgepole pine/Idaho fescue, INT-114
CLG2	Lodgepole pine/rhyzomatous grass, R6 E TP 036-92
CLG211	PICO/CARU-VASC: lodgepole/pinegrass-grouse huckleberry, R6 AG 3-1
CLG3	Lodgepole pine/bunchgrass on pumice
CLG311	PICO/STOC-BASIN: lodgepole/needlegrass basins, pumice, R6 E 104-85
CLG312	Same as CLS214, PICO/PUTR/FEID: lodgepole/bitterbrush/Idaho fescue (CLG312 is an underburned condition), R6 E-104-85
CLG313	PICO/STOC-LUCA-LINU: lodgepole/needlegrass-lupine-linanthastrum, R6 E 104-85
CLG314	PICO/STOC-LUCA-PUM: lodgepole/needlegrass-lupine, pumice, R6 E 104-85
CLG315	PICO/FRVI-FEID: lodgepole/strawberry-Idaho fescue, R6 E 79-004
CLG321	PICO/CAGE: lodgepole pine/elk sedge, INT-114
CLG4	Lodgepole pine/rhyzomatous grass on pumice, resource inventory
CLG411	PICO/CAPE-LUCA-PUM: lodgepole/sedge-lupine, pumice, R6 E 104-85
CLG412	PICO/CAPE-LUCA-PENST: lodgepole/sedge-lupine-penstemon, R6 E 104-85

CLG413 PICO/CAPE-STOC-BASIN: lodgepole/sedge-needlegrass basins, pumice, R6 E 104-85
CLG415 PICO/SIHY-CAPE: lodgepole/squirreltail-sedge, R6 E 79-004

CLH0 Lodgepole pine with associated hardwoods
CLH1 Lodgepole pine with quaking aspen
CLH111 PICO-POTR/FRVI: lodgepole/aspen/strawberry, R6 E 79-004

CLM0 Lodgepole wetlands (moist to wet soils)
CLM1 Lodgepole pine/sedge-grass wetland, resource inventory
CLM111 PICO/CANE-ELGL-WET: lodgepole/sedge-grass wetland, R6 E 104-85
CLM112 PICO/POPR: lodgepole pine/Kentucky bluegrass, R6 E TP-279-87, R6 NR TP-09-96
CLM113 PICO/CAEU: lodgepole pine/widefruit sedge, R6 E TP-279-87
CLM114 PICO/CAAQ: lodgepole pine/aquatic sedge, R6 E TP-279-87, R6 NR TP-09-96
CLM115 PICO/DECE: lodgepole pine/tufted hairgrass, R6 E TP-279-87, R6 NR TP-09-96

CLM2 Lodgepole pine/dwarf shrub-grass wetland
CLM211 PICO/ARUV-PUM: lodgepole/bearberry-pumice, R6 E 104-85, R6 E TP-279-87

CLM3 Lodgepole pine/low huckleberry-grass wetland
CLM311 PICO/VAOC2-PUM: lodgepole/blueberry-forb pumice, R6 E 104-85, R6 E TP-279-87
CLM312 PICO/VAOC2/CAEU: lodgepole/bog blueberry/widefruit sedge, R6 E TP-279-87
CLM313 PICO/SPDO/FORB: lodgepole/Douglas' spiraea/forb, R6 E TP-279-87
CLM314 PICO/SPDO/CAEU: lodgepole/Douglas' spiraea/widefruit sedge, R6 E TP-279-87

CLM411 PICO/XETE-PUM: lodgepole/beargrass, pumice, R6 E 104-85

CLM9 Lodgepole invading meadows, R-6 E 104-82
CLM911 PICO-PIEN/ELPA2: lodgepole-spruce/few-flowered spikerush, R6 E TP-279-87

CLRR Lodgepole pine on very rocky sites with little ground vegetation
CLRS Lodgepole pine on steep, stony sites with little ground vegetation
CLRX Lodgepole on rocky or steep sites with little ground vegetation

CLS0 Lodgepole pine with shrub-dominated ground vegetation
CLS1 Lodgepole pine/big sagebrush
CLS111 PICO/ARTR/FEID-PUM: lodgepole/sage/fescue-pumice R6 E 104-85
CLS112 PICO/ARTR-RHYO: lodgepole/sage-rhyolite, pumice, R6 E 104-85

CLS2 Lodgepole/pine/bitterbrush; lodgepole/shrub, xeric, resource inventory
CLS211 PICO/PUTR/STOC-PUM: lodgepole/bitterbrush/needlegrass-pumice, R6 E 104-85

CLS212 PICO/PUTR/CAPE-PUM: lodgepole/bitterbrush/sedge-pumice, R6 E 104-85
CLS213 PICO/PUTR/FORB-PUM: lodgepole/bitterbrush/forb-pumice, R6 E 104-85
CLS214 PICO/PUTR/FEID-PUM: lodgepole/bitterbrush/fescue-pumice, R6 E 104-85

CLS215 PICO/RICE-PUTR/STOC-PUM: lodgepole/current-bitterbrush/needlegrass-pumice, R6 E 104-85

CLS216 PICO/PUTR-RHYO: lodgepole/bitterbrush-rhyolite, R6 E 104-85

CLS3 Lodgepole pine/pinemat manzanita

CLS311 PICO/ARNE: lodgepole/pinemat manzanita, R6 E 104-85

CLS4 Lodgepole pine/grouse huckleberry; lodgepole/shrub, cool xeric, resource inventory, R6 E TP 036-92

CLS411 PICO/VASC-BLUE: lodgepole/grouse huckleberry-Blue Mountains, R6 AG 3-1

CLS412 PICO/VASC-PUM: lodgepole/grouse huckleberry-pumice, R6 E 104-85

CLS413 PICO/VASC/FORB: lodgepole/grouse huckleberry/forb, R6 E 79-005

CLS414 PICO/VASC/CAPE: lodgepole/grouse huckleberry/sedge, R6 E 79-005

CLS415 PICO/VASC-WALLO: lodgepole/grouse huckleberry-Wallowa, R6 E 255-86

CLS416 PICO/CARU: lodgepole/pinegrass, climax, R6 E TP 036-92, INT-34

CLS421 PICO/VASC-ID: lodgepole/grouse huckleberry-Idaho, INT-114, INT-34, INT-263

CLS422 PICO/VACA: lodgepole/dwarf huckleberry, INT-114, INT-34, INT-236

CLS5 Lodgepole pine/big huckleberry/buffaloberry, menziesia, R6 E TP 036-92

CLS511 PICO/VAME-BLUE: lodgepole/big huckleberry-Blue Mountains, R6 AG 3-1

CLS515 PICO/VAME-WALLO: lodgepole/big huckleberry-Wallowa, R6 E 255-86

CLS521 PICO/SHCA: lodgepole pine/russet buffaloberry, PNW-GTR-360

CLS6 Lodgepole/willow, alder moist sites, R6 E TP 036-92

CLS8 Lodgepole pine/coastal-salal-huckleberry

CLS811 Deflation plain: lodgepole/salal-evergreen huckleberry/sedge, Siuslaw

CLS812 Flood plain dune: lodgepole/rhododendron/evergreen huckleberry, Siuslaw

CLS821 Stabilized dune: lodgepole/rhododendron/evergreen huckleberry, Siuslaw

CLS822 Eroding dune: lodgepole/rhododendron/evergreen huckleberry, Siuslaw

CLS823 Dune slip face: lodgepole/rhododendron/evergreen huckleberry, Siuslaw

CLS831 Rolling dune: open lodgepole/kinnikinic-hairy manzanita, Siuslaw

CLS911 PICO/CEVE-ARPA-PUM: lodgepole/snowbrush-manzanita-pumice, R6 E 104-85

CLSM Lodgepole pine/shrub, mesic, resource inventory

CLX104 Malheur(04) 4A: slope less than 30 percent, CLG2 11, CLS5 11, CLS4 11

CLX120 Winema(20): CLG4 11, CLS2 12, CLG3

CLX204 Malheur(04) 4B: slope 30-70 percent, CLG2 11, CLS5 11, CLS4 11

CLX220 Winema(20): CLG3 11, CLM1 11, CLM2 11, CLS2 14

CLX320 Winema(20): CLM2 11, CLS2 11, CLS2 13

CLX420 Winema(20): CLG3 11

CLX520 Winema(20): CLG9, CLS9

CM Mountain hemlock

CMC0 Mountain hemlock with important associated conifers

CMC1 Mountain hemlock-Alaska-cedar

CMC151 CANO/OPHO: Alaska-cedar/devil's club, Dyrn '74

CMC2 Mountain hemlock-true firs
CMC3 Mountain hemlock-lodgepole pine
CMC311 TSME-PICO/ARNE: mountain hemlock-lodgepole pine/pinemet manzanita, W.Spr
CMC312 TSME-PICO/VASC: mountain hemlock-lodgepole/grouse huckleberry, W.Spr.
CMC313 TSME-PICO-ABLA2: mountain hemlock-lodgepole-subalpine fir, W.Spr.

CMF0 Mountain hemlock with forb-dominated ground vegetation
CMF1 Mountain hemlock/beargrass
CMF111 TSME/XETE-WSPR: mountain hemlock/beargrass-Warm Springs, W.Spr.
CMF121 TSME/XETE-DAUB: mountain hemlock/beargrass-Daub '68, INT-236, INT-34
CMF131 TSME/XETE-VAMY: mountain hemlock/beargrass-big huckleberry, PNW-GTR-359
CMF2 Mountain hemlock/foamflower, vanillaleaf
CMF250 TSME/TIUN-STRO: mountain hemlock/foamflower-twisted-stalk, R6 E TP 028-91
CMF251 TSME/CABI: mountain hemlock/marshmarigold, R6 E TP 028-91

CMF3 Mountain hemlock/evergreen forbs (pyrola)

CMFC Mountain hemlock/forb, cool, resource inventory

CMG0 Mountain hemlock with shrub-dominated ground vegetation
CMG1 Mountain hemlock/pinegrass
CMG2 Mountain hemlock/woodrush (Luzula), resource inventory
CMG211 TSME/LUZULA: mountain hemlock/woodrush, R6 E 257-86
CMG221 TSME/LUHI: mountain hemlock/Hitchcock's woodrush, PNW-GTR-359, INT-34, INT-236

CMG3 Mountain hemlock/sedge

CMRR Mountain hemlock on rocky sites with minimum ground vegetation
CMRS Mountain hemlock of steep slopes with minimum ground vegetation
CMRX Mountain hemlock on rocky or steep sites, minimum ground vegetation

CMS0 Mountain hemlock with shrub-dominated ground vegetation
CMS1 Mountain hemlock/grouse huckleberry/pinemat manzanita, resource inventory
CMS111 TSME/VASC-DES: mountain hemlock/grouse huckleberry-Deschutes, R6 E 79-005, R6 E 104-85
CMS113 Same as CMS111
CMS114 TSME/VASC: mountain hemlock/grouse huckleberry, R6 E 100-82, R6 E 257-86, R6 MTH-GP TP-08-95
CMS115 TSME/VASC-MTH: mountain hemlock/grouse huckleberry-Mount Hood and Gifford Pinchot, R6 MTH-GP TP-08-95
CMS121 TSME/VASC/LUHI: mountain hemlock/grouse huckleberry/woodrush, PNW-GTR-359

CMS122 TSME/RULA: mountain hemlock/trailing bramble, PNW-GTR-359
CMS131 TSME/VASC-WALLO: mountain hemlock/grouse huckleberry-Wallowa, R6 E 255-86

CMS2 Mountain hemlock/big huckleberries, fool's huckleberry, resource inventory

CMS210 TSME/VAME-GP: mountain hemlock/big huckleberry-Gifford Pinchot, R6 E 130-83

CMS211 TSME/VACC-PUM-WILL: mountain hemlock/huckleberry, steep pumice-Willamette

CMS212 TSME/VACC-ASH-WILL: mountain hemlock/huckleberry, ash-Willamette

CMS213 TSME/VACC-SAND-WILL: mountain hemlock-fir/huckleberry,black sand-Willamette

CMS214 TSME/VACC-S.ASH-WILL: mountain hemlock-fir/huckleberry, steep ash-Willamette

CMS215 TSME/VACC-CIND-WILL: mountain hemlock-pine/huckleberry, cinders-Willamette

CMS216 TSME/VAME/XETE: mountain hemlock/huckleberry/beargrass, R6 E 100-82, R6 E 257-86, R6 MTH-GP TP-08-95

CMS218 TSME/VAME/CLUN: mountain hemlock/big huckleberry/forb, R6 MTH-GP TP-08-95, R6 E 130-83

CMS220 TSME/MEFE-DAUB: mountain hemlock/fool's huckleberry-Daub '68, INT-236, INT-34

CMS221 TSME/MEFE: mountain hemlock/fool's huckleberry, R6 MTH-GP TP-08-95, R6 E 130-83

CMS223 TSME/RHAL: mountain hemlock/white rhododendron, R6 E 130-83, R6 MTH-GP TP-09-95

CMS231 TSME/VAME-WALLO: mountain hemlock/big huckleberry-Wallowas, R6 E 255-86

CMS241 TSME/VAAL: mountain hemlock/Alaska huckleberry, R6 E TP-001-88, R6 E TP 028-91

CMS242 TSME/VAAL/ERMO: mountain hemlock/Alaska huckleberry/avalanche lily, R6 E TP-001-88

CMS243 TSME/VAAL/XETE: mountain hemlock/Alaska huckleberry/beargrass, R6 E TP-001-88

CMS244 TSME/VAME-VAAL: mountain hemlock/big huckleberry-Alaska huckleberry, R6 E TP-001-88, R6 E TP 028-91

CMS245 TSME/VAME/XETE-WASH: mountain hemlock/big huckleberry/beargrass-western Washington, R6 E TP-001-88, R6 E TP 028-91

CMS246 TSME/VAME-MBS: mountain hemlock/big huckleberry-Mount Baker, R6 E TP 028-91

CMS250 TSME/VAME/STRO: mountain hemlock/big huckleberry/twisted-stalk, R6 E TP 028-91

CMS251 TSME/VAME/VASI: mountain hemlock/big huckleberry/Sitka valerian, R6 E TP 028-91

CMS252 TSME/VAAL/STRO: mountain hemlock/Alaska huckleberry/twisted-stalk, R6 E TP 028-91

CMS253 TSME/VAAL/CLUN: mountain hemlock/Alaska huckleberry/queen's cup, R6 E TP 028-91

CMS254 TSME/VAME/RULA: mountain hemlock/big huckleberry/trailing bramble, R6 E TP 028-91

CMS255 TSME/VAAL/MADI2: mountain hemlock/Alaska huckleberry/false lily-of-valle R6 E TP 028-91

CMS256 TSME/MEFE-VAAL: mountain hemlock/fool's huckleberry-Alaska huckleberry, PNW-GTR-359
CMS257 TSME/MEFE-VAME: mountain hemlock/fool's huckleberry-big huckleberry, PNW-GTR-359
CMS258 TSME/VAAL-WEN: mountain hemlock/Alaska huckleberry-Wenatchee, PNW-GTR-359
CMS259 TSME/VAME-WEN: mountain hemlock/big huckleberry-Wenatchee, PNW-GTR-359

CMS3 Mountain hemlock/rustyleaf-azalea-heath-heather
CMS311 TSME/PHEM-VADE: mountain hemlock/red heather-blueleaf huckleberry, R6 E TP-001-88
CMS312 TSME/RHAL-VAME: mountain hemlock/white rhododendron-big huckleberry, R6 E TP-001-88
CMS323 Same as CMS223, TSME/RHAL: mountain hemlock/white rhododendron, R6 MTH-GP-TP-08-95
CMS350 TSME/PHEM-VADE: mountain hemlock/red heather-blue-leaf huckleberry, R6 E TP 028-91
CMS351 TSME/RHAL-VAAL: mountain hemlock/white rhododendron-Alaska huckleberry, R6 E TP 028-91
CMS352 TSME/RHAL-VAME: mountain hemlock/white rhododendron-big huckleberry, R6 E TP 028-91
CMS353 TSME/CLPY/RUPE: mountain hemlock/copperbush/five-leaved bramble, R6 E TP 028-91
CMS354 TSME/PHEM-VADE: mountain hemlock/mountainheath-blueleaved huckleberry, PNW-GTR-359
CMS355 TSME/RHAL-VAAL: mountain hemlock/Cascades azalea-Alaska huckleberry, PNW-GTR-359
CMS356 TSME/RHAL-VAME: mountain hemlock/Cascade's azalea-big huckleberry, PNW- GTR-359

CMS4 Mountain hemlock/devil's club, resource inventory
CMS450 TSME/OPHO-VAAL: mountain hemlock/devil's club-Alaska huckleberry, R6 E TP 028-91

CMS5 Mountain hemlock/low shrub
CMS6 Mountain hemlock/vine maple, ocean spray, rhododendron, resource inventory
CMS611 TSME-PSME/ACCI-LAVA-WILL: mountain hemlock/Douglas-fir/vine maple, lava-Willamette
CMS612 TSME/RHMA: mountain hemlock/rhododendron, R6 E 257-86, R6 MTH-GP TP-08-95

CMSC Mountain hemlock/Alaska huckleberry, resource inventory

CP **Ponderosa, Jeffrey pine**

CPC0 Ponderosa, Jeffrey pine with associated conifer(s): Jeffrey pine-conifer, resource inventory
CPC1 Ponderosa pine-incense-cedar
CPC2 Ponderosa-juniper
CPC211 PIPO-JUOC/CELE-PUTR-ARTR/FEID: ponderosa-juniper/mountain-mahogany-big sage/fescue, R6 E 79-004

CPC3	Ponderosa pine-lodgepole pine
CPC4	Jeffrey pine dominant
CPC5	Jeffrey pine-white pine
CPC6	Ponderosa pine-Douglas-fir
CPC611	PIPO-PSME/GETR-WYAM: ponderosa-Douglas-fir/geum-wyethia, W.Spr.
CPC612	PIPO-PSME/PUTR: ponderosa-Douglas-fir/bitterbrush, W.Spr.
CPC613	PIPO-PSME/ARPA-CEVE: ponderosa-Douglas-fir/arctostaphylos-ceanothus, W.Spr.
CPC614	PIPO-PSME/SYMPH: ponderosa-Douglas-fir/snowberrry, W.Spr.
CPF0	Ponderosa, Jeffrey pine with forb ground vegetation: Jeffrey pine/grass, resource inventory
CPF111	PIPO/WYMO: ponderosa/wyethia, R6 E 79-004
CPF121	PIPO/GETR-WYAM: ponderosa/geum-wyethia, W.Spr.
CPG0	Ponderosa, Jeffrey pine with grass ground vegetation: Jeffrey pine/grass, resource inventory
CPG1	Ponderosa pine/bunchgrass—nonpumice: resource inventory
CPG111	PIPO/AGSP-BLUE: ponderosa/wheatgrass-Blue Mountains, R6 AG 3-1, R6 E TP 036-92
CPG112	PIPO/FEID-BLUE: ponderosa/Idaho fescue-Blue Mountains, R6 AG 3-1, R6 E TP 036-92
CPG121	PIPO/AGSP-DAUB: ponderosa/wheatgrass-Daub '68, XB-0936, INT-236
CPG122	PIPO/FEID-DAUB: ponderosa/Idaho fescue-Daub '68, XB-0936, INT-236
CPG123	PIPO/STOC-DAUB: ponderosa/needlegrass-Daub '68, XB-0936
CPG124	PIPO/STOC-ID: ponderosa/needlegrass-Idaho, INT-114
CPG131	PIPO/FEID-WALLO: ponderosa/Idaho fescue-Wallowa, R6 E 255-86
CPG132	PIPO/AGSP-WALLO: ponderosa/wheatgrass-Wallowa, R6 E 255-86
CPG133	PIPO/FEID-ID: ponderosa/Idaho fescue-Idaho, INT-114, INT-34
CPG134	PIPO/AGSP-ID: ponderosa/wheatgrass-Idhao, INT-114, INT-34
CPG141	PIPO/AGSP-WEN: ponderosa/bluebunch wheatgrass-Wenatchee, PNW-GTR- 359
CPG142	PIPO/AGSP-ASDE: ponderosa/bluebunch wheatgrass-milkvetch, PNW-GTR- 359
CPG2	Ponderosa/rhizomatous grass-sedge, resource inventory
CPG212	PIPO/CAPE-FEID-LALA2: ponderosa/sedge-fescue-peavine, R6 E 104-85
CPG221	PIPO/CARU: ponderosa/pinegrass, R6 E TP 036-92
CPG222	PIPO/CAGE: ponderosa/elk sedge, R6 E TP 036-92
CPG231	PIPO/CARU-AGSP: ponderosa/pinegrass-bluebunch wheatgrass, PNW-GTR- 359
CPG3	Ponderosa/bunchgrass—pumice soil
CPG311	Same as CPS211, PIPO/PUTR/FEID: ponderosa/Idaho fescue (CPG311 PIPO/FEID is an underburned condition), R6 E 104-85
CPG6	Jeffrey pine—serpentine/gabbro bunchgrass
CPH0	Ponderosa, Jeffrey pine with important associated hardwoods
CPH1	Ponderosa, Jeffrey-madrone-manzanita
CPH2	Ponderosa, Jeffrey-oak, white or black

CPH211 PIPO-QUGA/BASA: ponderosa-white oak/arrowleaf balsamroot, R6 E TP-004- 88

CPH212 PIPO-QUGA/PUTR: ponderosa-white oak/bitterbrush, R6 E TP-004-88

CPH3 Ponderosa, Jeffrey pine with quaking aspen

CPH311 PIPO-POTR/PONE: ponderosa/aspen/wheeler bluegrass, R6 E 79-004

CPH4 Jeffrey pine-oak

CPM0 Ponderosa, Jeffrey pine wetlands (moist to wet soil)

CPM1 Ponderosa, Jeffrey pine/wildrye-bluegrass

CPM111 PIPO/ELGL: ponderosa/blue wildrye, R6 AG 3-1

CPM112 PIPO/POPR: ponderosa pine/Kentucky bluegrass, R6 NR TP-09-96

CPRR Ponderosa on rocky sites with little ground vegetation

CPRS Ponderosa on steep slopes with little ground vegetation

CPRX Ponderosa pine on rocky or steep slopes with little ground vegetation

CPS0 Ponderosa, Jeffrey pine with shrub ground vegetation: Jeffrey pine/shrub, resource inventory

CPS1 Ponderosa, Jeffrey/big sagebrush, resource inventory, R6 E TP 036-92

CPS111 PIPO/PUTR-ARTR/FEID: ponderosa/bitterbrush sage/fescue, R6 E 104-85

CPS112 PIPO/PUTR-ARTR/SIHY-RYHO: ponderosa/bitterbrush-sage/squirreltail, R6 E 104-85

CPS121 PIPO/ARTR/PONE: ponderosa/big sage/wheeler bluegrass, R6 E 79-004

CPS2 Ponderosa, Jeffrey/bitterbrush, mountain-mahogany, resource inventory

CPS211 PIPO/PUTR/FEID-PUMICE: ponderosa/bitterbrush/fescue, R6 E 104-85

CPS212 PIPO/PUTR/STOC-PUM: ponderosa/bitterbrush/needlegrass-pumice, R6 E 104-85

CPS213 PIPO/PUTR-ARPA/STOC-PUM: ponderosa/bitterbrush-manzanita/needle-grass, pumice, R6 E 104-85

CPS214 PIPO/PUTR-ARPA/CAPE-PUM: ponderosa/bitterbrush-manzanita/sedge, pumice, R6 E 104-85

CPS215 PIPO/PUTR/CAPE-PUM: ponderosa/bitterbrush/sedge, pumice, R6 E 104-85

CPS216 PIPO/PUTR/FEID-AGSP-PUM: ponderosa/bitterbrush/bunchgrass, pumice, R6 E 104-85

CPS217 PIPO/PUTR-ARPA/FEID-PUM: ponderosa/bitterbrush-manzanita/fescue, pumice, R6 E 104-85

CPS218 PIPO/PUTR/SIHY-RHYO: ponderosa/bitterbrush/squirreltail, rhyolite, R6 E 104-85

CPS221 PIPO/PUTR/CARO: ponderosa/bitterbrush/ross sedge, R6 AG 3-1, R6 E TP 036-92

CPS222 PIPO/PUTR/CAGE: ponderosa/bitterbrush/elk sedge, R6 E TP 036-92

CPS223 same as CPS211

CPS224 same as CPS217

CPS226 PIPO/PUTR/FEID-AGSP: ponderosa/bitterbrush/fescue-wheatgrass, R6 E TP 036-92

CPS227 PIPO/PUTR-ID: ponderosa/bitterbrush-Idaho, INT-114, W.Spr., Daub '68, XB-0936, INT-34

CPS228 PIPO/PUTR-ARPA: ponderosa/bitterbrush-manzanita, W.Spr.
CPS231 PIPO/PUTR/AGSP: ponderosa pine/bitterbrush/wheatgrass, R6 E 255-86
CPS232 PIPO/CELE/CAGE: ponderosa/mountain-mahogany/elk sedge, R6 E TP 036-92
CPS233 PIPO/CELE/PONE: ponderosa/mountain-mahogany/wheelers bluegrass, R6 E TP 036-92
CPS234 PIPO/CELE/FEID-AGSP: ponderosa/mountain-mahogany/fescue-wheatgrass, R6 E TP 036-92
CPS241 PIPO/PUTR/AGSP: ponderosa/bitterbrush/bluebunch wheatgrass, PNW- GTR-359

CPS3 Ponderosa pine/ceanothus: ponderosa pine/bitterbrush/fescue, resource inventory
CPS311 PIPO/PUTR-CEVE/STOC-PUM: ponderosa/bitterbrush-ceanothus/needle-grass, R6 E 104-85
CPS312 PIPO/PUTR-CEVE/CAPE-PUM: ponderosa/bitterbrush-ceanothus/sedge, R6 E 104-85
CPS314 PIPO/PUTR-CEVE/FEID: ponderosa/bitterbrush-ceanothus/fescue, R6 E 104-85

CPS4 Ponderosa pine/oceanspray-snowberry-cherry tall shrub
CPS5 Ponderosa pine/snowberry-spiraea, resource inventory
CPS511 PIPO/SYAL-FLOOD: ponderosa/snowberry-flood plain, R6 E TP-279-87, R6 NR TP-09-96
CPS512 PIPO-MC/SPDO-SYAL: ponderosa-mixed conifer/spiraea-snowberry, R6 E TP-279-87
CPS521 PIPO/SYAL-DAUB: ponderosa/snowberry-Daub '68, XB-0936, INT-236
CPS522 PIPO/SYAL-WALLO: ponderosa/common snowberry-Wallowa, R6 E 255-86
CPS523 PIPO/SPBE: ponderosa/spirea, R6 E 255-86
CPS524 PIPO/SYAL: ponderosa/common snowberry, R6 E TP 036-92
CPS525 PIPO/SYOR: ponderosa/mountain snowberry, R6 E TP 036-92
CPS526 PIPO/SYOR-ID: ponderosa/mountain snowberry-Idaho, INT-114
CPS527 PIPO/SYAL-ID: ponderosa/common snowberry-Idaho, INT-114, INT-34

CPS6 Ponderosa pine/manzanita-deerbrush
CPS7 Ponderosa pine/ninebark
CPS721 PIPO/PHMA-DAUB: ponderosa/ninebark-Daub '68, INT-114, INT-236

CPX104 Malheur(04) 6A: slope less than 30 percent, CPG1 12, CPS2 21, CPM1 11, CDG1 11
CPX120 Winema(20): CPS2 11, CPG3 11
CPX204 Malheur(04) 6B: 30-70 percent, CPG1 12, CPS2 21, CPM1 11, CDG1 11
CPX220 Winema(20): CPS2 12, CPS2 13, CPS3 11
CPX304 Malheur(04) 6C: 30-70 percent, tuff, CPG1 11, CPS2 21, CPM1 11, CDG1 11
CPX320 Winema(20): CPS2 13, CPS2 15, CPS3 12, CPS2 13, CWS1 12
CPX404 Malheur(04) 6D: less than 30 percent, SERP, CPG1 11, CPS2 21, CPM1 11, CDG1 11
CPX420 Winema(20): CPS3, CPS6
CPX504 Malheur(04) 6E: 30-70 percent, serp, CPG1 11, CPS2 21, CPM1 11, CDG1 11
CPX520 Winema(20): CPC2

CPY104	Malheur(04) 6F: ponderosa/wyethia, slope less than 30 percent
CQ	**Western white pine, sugar pine**
CR	**Red fir (Shasta red)**
CRC0	Red fir with associated conifers
CRC1	Red fir-incense-cedar
CRC2	Red fir-Alaska-cedar, resource inventory
CRC3	Red fir-white fir, resource inventory
CRF0	Red fir with forb-dominated ground vegetation
CRF1	Red fir/ericaceous forb (pyrola, chimaphila)
CRF2	Red fir/short forbs; red fir/grass-forb, resource inventory
CRG0	Red fir with grass- or sedge-dominated vegetation
CRG111	ABMAS/CAPE: red fir/long stolon sedge, R6 E 79-005
CRH0	Red fir with important associated hardwood(s)
CRH1	Red fir/oaks: red fir/Sadler's oak, resource inventory
CRS0	Red fir with shrub-dominated ground vegetation
CRS1	Red fir/grouse huckleberry/pinemat manzanita
CRS111	ABMAS/ARNE: mixed conifer/manzanita, R6 E 104-85
CRS112	ABMAS-TSME/ARNE/CAPE: red fir-mountain hemlock/manzanita/sedge, R6 E 79-005
CRS2	Red fir/blackberry-snowberry
CRS3	Red fir/chinkapin
CRS311	ABMAS/CACH/CHUM-CAPE: Red fir/chinkapin/prince's pine-sedge, R6 E 79-005
CRS313	same as CRS311
CRS4	Red fir/huckleberries, shepherdia, rusty leaf
CS	**Spruce, Sitka**
CSC0	Sitka spruce with associated conifers
CSF0	Sitka spruce with forb-dominated ground vegetation
CSF1	Sitka spruce/swordfern, resource inventory
CSF111	PISI/POMU-OXOR: Sitka spruce/swordfern-oxalis, R6 E TP-001-88
CSF121	PISI/POMU: Sitka spruce/swordfern, R6 E 220-86
CSF2	Sitka spruce/ladyfern-twistedstalk
CSF3	Sitka spruce/oxalis
CSF321	PISI/OXOR: Sitka spruce/oxalis, R6 E 220-86
CSH0	Sitka spruce with important associated hardwood(s)
CSH1	Sitka spruce/California laurel
CSH2	Sitka spruce/elderberry
CSH3	Sitka spruce/bigleaf maple
CSM0	Sitka spruce, wetland (moist to wet soil)
CSM1	Sitka spruce/willow-waxmyrtle

CSS0	Sitka spruce with shrub-dominated ground vegetation
CSS1	Sitka spruce/evergreen huckleberry
CSS2	Sitka spruce/red huckleberry
CSS221	PISI/MEFE-VAPA: Sitka spruce/fool's huckleberry-red huckleberry, R6 E 220-86
CSS3	Sitka spruce/salal
CSS321	PISI/GASH: Sitka spruce/salal, R6 E 220-86
CSS4	Sitka spruce/rhododrendon
CSS411	Stabilized dune/Sitka spruce-Douglas-fir/rhododendron-evergreen huckleberry, Siuslaw
CSS412	Flood plain/Sitka spruce-lodgepole-western hemlock/rhododendron, Siuslaw
CSS421	Sandy, steep/Sitka spruce-Douglas-fir/rhododendron-evergreen huckleberry, Siuslaw
CSS422	Sandy, gentle/Sitka spruce-Douglas-fir/rhododendron-evergreen huckleberry, Siuslaw
CSS5	Sitka spruce/thimbleberry-salmonberry, resource inventory
CSS521	PISI/RUSP: Sitka spruce/salmonberry, R6 E 220-86
CSS522	PISI/RUSP-GASH: Sitka spruce/salmonberry-salal, R6 E 220-86
CSS6	Sitka spruce/devil's club
CSS621	PISI/OPHO: Sitka spruce/devil's club, R6 E 220-86
CSS7	Sitka spruce/vine maple
CT	**Port-Orford-cedar**
CTH0	Port-Orford-cedar with hardwoods
CTH1	Port-Orford-cedar/oaks, resource inventory
CTH2	Port-Orford-cedar/big leaf maple
CTS0	Port-Orford-cedar with shrub ground vegetation
CTS1	Port-Orford-cedar/Oregongrape, resource inventory
CTS2	Port-Orford-cedar/salal
CTS3	Port-Orford-cedar/box-leaved silktassel
CW	**White fir, grand fir**
CWC0	White, grand fir with associated conifers
CWC1	White fir-incense-cedar-pine
CWC111	ABCO-PIP0-CADE/AMAL: White fir-ponderosa-incense-cedar/serviceberry, R6 E 79-004
CWC2	White fir-Douglas-fir-ponderosa pine: white fir-southwestern Oregon, hot, resource inventory
CWC211	ABCO-PSME/CEVE-CACH/PTAQ: mixed conifer/snowbrush-chinkapin/-bracken, R6 E 104-85
CWC212	ABCO-PSME/CEVE-CACH/CARU: mixed conifer/snowbrush-chinkapin/-pineg, R6 E 104-85
CWC213	ABCO/CEVE/CAPE-PTAQ: mixed conifer/snowbrush/sedge-bracken, R6 E 104-85
CWC214	same as CWC215
CWC215	ABCO-PSME/CEVE/ARUV: mixed conifer/snowbush/bearberry, R6 E 79-00

CWC3 White fir-lodgepole pine (lodgepole reproducing)
CWC311 ABCO-PICO/STOC-CAPE: white fir-lodgepole/needlegrass-sedge, R6 E 79-004

CWC4 White fir-ponderosa-white or sugar pine (no Douglas-fir)
CWC411 ABCO-PIPO-PILA/RIVI: white fir-ponderosa-white pine/sticky currant, R6 E 79-004
CWC412 ABCO-PIPO-PILA/ARPA: white fir-ponderosa-sugar pine/manzanita, R6 E 79-004

CWC5 White, grand fir/Englemann spruce, Brewer spruce, resource inventory
CWC511 ABGR-PIEN/SMST: grand fir-Engelmann spruce/starry solomonplume, R6 E TP-004-88, INT-34

CWC6 White fir-Port-Orford-cedar: white fir-southwestern Oregon, mesic, resource inventory
CWC7 White, grand fir-true firs (silver, Shasta red)
CWC8 White, grand fir/Pacific yew
CWC811 ABGR/TABR/CLUN: grand fir/Pacific yew/queen's cup beadlily, R6 E TP 036-92
CWC812 ABGR/TABR/LIBO2: grand fir/Pacific yew/twinflower, R6 E TP 036-92

CWC9 White, grand fir-Engelmann spruce
CWC911 PIEN-BOTTOMS: Engelmann spruce bottoms, R6 E 104-85

CWF0 White, grand fir with forb-dominated ground vegetation
CWF1 White fir/vanillaleaf-foamflower
CWF2 White fir/pyrola-pipsissewa
CWF211 ABGR/CHUM: grand fir/prince's pine, R6 E 257-86

CWF3 White, grand fir/twinflower
CWF311 ABGR/LIBO2-FORB: grand fir/twinflower-forb, R6 AG 3-1, R6 E 255-86
CWF312 ABGR/LIBO2-BLUE: grand fir/twinflower-Blue Mountains, R6 E TP 036-92
CWF313 ABGR/LIBO2-ID: grand fir/ twinflower-Idaho, INT-114, XB-0936, INT-34, INT-236
CWF321 ABGR/LIBO2: grand fir/twinflower, R6 E TP-004-88

CWF4 White, grand fir/beadlily, low forb
CWF421 ABGR/CLUN-WALLO: grand fir/queen's cup-Wallowa, R6 E 255-86, R6 E TP 036-92
CWF422 ABGR/TABR/CLUN: grand fir/Pacific yew/queen's cup, R6 E 255-86
CWF423 ABGR/CLUN-ID: grand fir/queen's cup-Idaho, INT-114, INT-236, INT-34
CWF431 ABCO/CLUN: white fir/queen's cup beadlily, R6 E TP-279-87
CWF444 ABGR/ARCO: grand fir/heartleaf arnica, PNW-GTR-359

CWF5 White, grand fir mid-forb ground vegetation
CWF511 ABGR/COOC2: grand fir/gold thread, R6 E 255-86
CWF512 ABGR/TRCA3: grand fir/false bugbane, R6E TP 036-92
CWF521 ABGR/TRLA2: grand fir/starflower, R6 E TP-004-88
CWF522 ABGR/ACTR: grand fir/vanillaleaf, R6 E TP-004-88
CWF523 ABGR/POPU: grand fir/skunk-leaved polemonium, R6 E TP-004-88
CWF524 ABGR/ACTR-WEN: grand fir/vanillaleaf-Wenatchee, PNW-GTR-359
CWF531 ABGR/XETE: grand fir/beargrass, INT-114, INT-34, INT-236
CWF532 ABGR/COOC2-ID: grand fir/gold thread-Idaho, INT-114

CWF6 Grand or white fir with fern ground vegetation
CWF611 ABGR/GYDR: Grand fir/oakfern, R6 E TP 036-92, R6 NR TP-09-96
CWF612 ABGR/POMU-ASCA3: grand fir/swordfern/ginger, R6 E TP 036-92
CWF613 ABGR/ATFI: grand fir/ladyfern, R6 NR TP-09-96, MISC#54

CWFC White fir/forb, cool, resource inventory
CWFM White fir/forb, mesic, resource inventory

CWG0 White, grand fir with grass-dominated ground vegetation
CWG1 Grand fir/pinegrass-elk sedge, resource inventory
CWG111 ABGR/CAGE-BLUE: grand fir/elk sedge, Blue Mountains, R6 AG 3-1, R6 E TP 036-92
CWG112 ABGR/CARU-ASH: grand fir/pinegrass-ash soil, R6 AG 3-1, R6 E 255-86
CWG113 ABGR/CARU-BLUE: grand fir/pinegrass-Blue Mountains, R6 E TP 036-92
CWG114 ABGR/CARU-ID: grand fir/pinegrass-Idaho, INT-114
CWG121 ABGR/CAGE: grand fir/elk sedge, R6 E TP-004-88
CWG122 ABGR/CAGE-GP: grand fir/elk sedge-Gifford Pinchot, R6 E TP-006-88
CWG123 ABGR/CARU: grand fir/pinegrass, R6 E TP-006-88
CWG124 ABGR/CARU-WEN: grand fir/pinegrass-Wenatchee, PNW-GTR-359
CWG125 ABGR/CARU-LUPIN: grand fir/pinegrass-lupine, PNW-GTR-359

CWG2 White, grand fir/Columbia brome
CWG211 ABGR/BRVU: grand fir/woodland brome, R6 E TP 036-92

CWH0 White, grand fir with important associated hardwood(s)
CWH1 White, grand fir/chinkapin
CWH111 ABCO/CEVE-CACH: white fir/ceanothus-chinkapin, R6 E 104-85
CWH112 ABCO/CACH-PAMY/CHUM: white fir/chinkapin-boxwood/prince's pine, R6 E 79-005

CWH2 White, grand fir with quaking aspen
CWH211 ABCO-PIPO-POTR/CAPE: white fir-ponderosa-aspen/long-stolon sedge, R6 E 79-004

CWH3 White fir/tanoak, canyon oak
CWH4 White, grand fir/vine maple, Douglas maple, dogwood, resource inventory
CWH5 White fir/Sadler's oak

CWM0 White, grand fir, bottomlands
CWM1 White fir/alder/snowberry-shrub bottomlands
CWM111 ABCO/ALTE: white fir/alder/meadow, R6 E 79-005

CWM2 Grand/white fir/forb bottomlands
CWM210 ABGR-THPL/LAYM: grand fir-western redcedar/ladyfern, R6 NR TP-10-96

CWS0 White, grand fir with shrub-dominated ground vegetation
CWS1 White, grand fir/ceanothus, manzanita
CWS112 ABCO/CEVE-ARPA-PUM: white fir/ceanothus-manzanita-pumice, R6 E 104-85
CWS113 ABCO/CEVE-ARPA/CAPE-PEEU: mixed conifer/ceanothus-manzanita/-long- stolon sedge-penstemon, R6 E 104-85
CWS114 ABCO/CEVE-PUM: mixed conifer/ceanothus/pumice, R6 E 104-85
CWS115 ABCO/CEVE/CAPE: mixed conifer/ceanothus/sedge, R6 E 104-85

CWS116 ABCO/CEVE-CEPR/FRVI: mixed conifer/ceanothus-squawcarpet-strawberry, R6 E 79-005
CWS117 ABCO-PIPO/ARPA-BERE: white fir-ponderosa/manzanita/Oregongrape, R6 E 79-004
CWS121 ABGR/CEVE-WSPR: grand fir/ceanothus-Warm Springs, W.Spr.

CWS2 White, grand fir/huckleberry, Oregongrape
CWS211 ABGR/VAME: grand fir/big huckleberry, R6 AG 3-1, R6 E 255-86
CWS212 ABGR/VAME-BLUE: grand fir/big huckleberry-Blue Mountains, R6 E TP 036-92
CWS213 ABGR/VAME-WSPR: grand fir/big huckleberry-Warm Springs, W.Spr.
CWS214 ABGR/VAME/CLUN-COL: grand fir/big huckleberry/clintonia-Colville, PNW-GTR-360
CWS221 ABGR/VAME/LIBO2: grand fir/big huckleberry/twinflower, R6 E TP-006-88
CWS222 ABGR/VAME/CLUN: grand fir/big huckleberry/queen's cup beadlily, R6 E TP-006-88
CWS223 ABGR/RUPA/DIHO: grand fir/thimbleberry/fairy bells, R6 E TP-006-88
CWS224 ABGR/BENE/ACTR: grand fir/dwarf Oregongrape/vanillaleaf, R6 E TP-006-88
CWS225 ABGR/BENE: grand fir/dwarf Oregongrape, PNW-GTR-359
CWS226 ABGR/BENE/CARU: grand fir/dwarf Oregongrape/pinegrass, PNW-GTR-359
CWS231 ABGR/VAGL: grand fir/blue huckleberry, INT-114

CWS3 White, grand fir/spiraea-snowberry: white fir/low shrub, mesic, resource inventory
CWS311 same as CWH1
CWS312 ABCO/SYAL/FRVI: white fir/snowberry/strawberry, R6 E 79-005
CWS313 ABCO-PIPO/SYAL/STJA: white fir-ponderosa/snowberry/starwort, R6 E 79-004
CWS314 ABGR/SYAL-FLOOD: grand fir/common snowberry-flood plain, R6 NR TP-09-96
CWS321 ABGR/SPBE: grand fir/spirea, R6 E 255-86
CWS322 ABGR/SPBE-BLUE: grand fir/spirea-Blue Mountains, R6 E TP 036-92
CWS323 ABGR/SPBE-ID: grand fir/spirea-Idaho, INT-114, INT-236
CWS331 ABGR/SYMPH: grand fir/snowberry, R6 E TP-004-88
CWS332 ABGR/SYMO/ACTR: grand fir/creeping snowberry/vanillaleaf, R6 E TP-006-88
CWS333 ABGR/SYMPH-WSPR: grand fir/snowberry-Warm Springs, W.Spr.
CWS334 ABGR/SYMPH/CAGE: grand fir/snowberry/elk sedge, W.Spr.
CWS335 ABGR/SPBEL/PTAQ: grand fir/shinyleaf spirea/bracken fern, PNW-GTR-359
CWS336 ABGR/SYAL/CARU: grand fir/common snowberry/pinegrass, PNW-GTR-359
CWS337 ABGR/SYOR: grand fir/whortleleaf snowberry, PNW-GTR-359
CWS338 ABGR/ARNE: grand fir/pinemat manzanita, PNW-GTR-359

CWS4 White, grand fir/ninebark
CWS412 ABGR/ACGL-PHMA: grand fir/Rocky Mountain maple-ninebark, R6 E 255-86
CWS421 ABGR/PHMA: grand fir/ninebark, PNW-GTR-360, INT 236
CWS422 ABGR/ACGLD/CLUN: grand fir/Douglas maple/clintonia, PNW-GTR-360

CWS5 White, grand fir/oceanspray-Oregongrape, vine maple, salal, resource inventory
CWS511 ABCO/HODI/LOM-STD: white fir/oceanspray/lomatium, steep shallow soil, Willamette
CWS521 ABGR/ARUV: grand fir/bearberry, R6 E 257-86
CWS522 ABGR/BENE: grand fir/dwarf Oregongrape, R6 E 257-86
CWS531 ABGR/HODI: grand fir/oceanspray, R6 E TP-004-88
CWS532 ABGR/ACCI/ACTR: grand fir/vine maple/vanillaleaf, R6 E TP-004-88
CWS533 ABGR/CACH: grand fir/chinkapin, R6 E TP-004-88
CWS534 ABGR/HODI-GP: grand fir/oceanspray-Gifford Pinchot, R6 E TP-006-88
CWS535 ABGR/ACCI-BEAQ/TRLA2: grand fir/vine maple-tall Oregongrape-starflower, R6 E TP-006-88
CWS536 ABGR/COCO2/ACTR: grand fir/hazel/vanillaleaf, R6 E TP-006-88
CWS537 ABGR/CONU/ACTR: grand fir/Pacific dogwood/vanillaleaf, R6 E TP-006-88
CWS538 ABGR/ACCI: grand fir/vine maple, W.Spr.
CWS541 ABGR/ACGL: grand fir/Rocky Mountain maple, R6 E TP 036-92
CWS542 ABGR/ACGL-ID: grand fir/Rocky Mountain maple-Idaho, INT-114
CWS543 ABGR/ACGL-FLOOD: grand fir/Rocky Mountain maple-flood plain, R6 NR TP-09-96
CWS551 ABGR/ACCI-WEN: grand fir/vine maple-Wenatchee, PNW-GTR-359
CWS552 ABGR/ACCI-CHUM: grand fir/vine maple/chimaphila, PNW-GTR-359
CWS553 ABGR/ACCI/CLUN: grand fir/vine maple/clintonia, PNW-GTR-359
CWS554 ABGR/HODI/CARU: grand fir/oceanspray/pinegrass, PNW-GTR-359

CWS6 White, grand fir/trailing vine (whipplea, dwarf bramble, poison oak), resource inventory
CWS7 White, grand fir/pachistima, serviceberry
CWS711 ABGR/PAMY-WSPR: grand fir/pachistima-Warm Springs, W.Spr.
CWS712 ABGE/PAMY/CARU: grand fir/pachistima/pinegrass, W.Spr.
CWS722 ABGR/PAMY: grand fir/pachistima, Daub. '68

CWS8 White, grand fir/low huckleberry, resource inventory
CWS811 ABGR/VASC: grand fir/grouse huckleberry, R6 AG 3-1, R6 E TP 036-92
CWS812 ABGR/VASC/LIBO2: grand fir/grouse huckleberry/twinflower, R6 E TP 036-92
CWS821 ABGR/VACA: grand fir/dwarf huckleberry, PNW-GTR-360
CWS822 ABGR/VACA-ID: grand fir/dwarf huckleberry-Idaho, INT-114

CWS912 ABGR/ACGL: grand fir/Rocky Mountain maple, R6 E 255-86

CWSC White fir/tall shrub, cool, resource inventory
CWSM White fir/SW OR, shrub, mesic, resource inventory

CWX104 Malheur(04) 3A: slope less than 30 percent, CWF3 11, CWS2 11, CWS8 11
CWX204 Malheur (04) 3B: slope 30-70 percent, CWF3 11, CWS2 11, CWS8 11
CWX120 Winema(20): CWS1 12, CWS1 14
CWX220 Winema(20): CWH1 11
CWX320 Winema(20): CLS311, C MS1 11, CRS1 11
CWX420 Winema(20): CWC1, CWC2, CWC9, CWH1, CWS1
CWY104 Malheur(04) 5A: slope less 30 percent, CWG1 11, CWG1 12, CDS7 11
CWY204 Malheur(04) 5B: slope 30-70 percent, CWG1 11, CWG1 12, CDS7 11
CWY304 Malheur(04) 5C: less 30 percent, serpen., CWG1 11, CWG1 12, CDS7 11
CWY404 Malheur(04) 5D: 30-70 percent, serpen, CWG1 11, CWG1 12, CDS7 11

CX Coniferous forest

D Desert

DC Cold desert (freezing winters)
DC10 Greasewood
DC1121 SAVE/DIST: greasewood/saltgrass, Daub '70

DC20 Shadscale

DC30 Winterfat
DE3121 EULA/POSA3: winterfat/bluegrass, Daub '70

DC40 Hopsage
DC4121 GRSP/POSA3: hopsage/bluegrass, Daub '70

DW Warm desert

DX Desert

F Forbland

FM Moist (mesic) forblands in forest zone

FM10 Bracken-blackberry
FM20 Beargrass
FM2911 XETE-FERU: beargrass-red fescue, R6 E 257-86

FM30 Forb-grass communities
FM3011 VISA-ERPE-ELGL: vetch-peregrine fleabane-wildrye, R6 E 257-86

FM80 Coastal forbland
FM88 Coastal lupine

FM90 Buckwheat scabland
FM9111 ERDO/POSA3: Douglas' buckwheat/Sandberg's bluegrass, R6 E 255-86
FM9112 ERST2/POSA3: strict buckwheat/Sandberg's bluegrass, R6 E 255-86
FM9113 ERUM-RIDGE: sulfurflower-ridgetops, R6 E 255-86
FM9122 ERSP/POSA3: eriogonum sphaeroceaphalum/Poa, Daub '70
FM9123 ERDO/POSA3-DAUB: eriogonum douglasii/Poa-Daub '70
FM9124 ERCO/POSA3: eriogonum compositum/Poa, Daub '70
FM9125 ERTH/POSA3: eriogonum thymoides-Poa, Daub '70
FM9911 ERLA-PHHE: eriophyllum-phacelia, R6 E 257-86

FS Subalpine forb fields, alpine forb fields

FS10 Subalpine-valerian
FS20 Subalpine-moist: lupine-Indian paintbrush-buttercup
FS30 Subalpine-wet: saussurea-monkeyflower-marshmarigold
FS40 Subalpine-luetka
FS50 Subalpine-fleeceflower
FS5911 POPH-ALPINE: Blue mountain subalpine fleeceflower, R6 AG 3-1

FS60 Subalpine-lupine-aster-grass
FS70 Subalpine-cushion plant
FSLO Subalpine, alpine forb lands with scattered conifers

FW **Wet forblands, forb meadows, R6 E 255-86**

FW10 Cowparsnip wetlands
FW20 Cottonsedge/sphagnum-sedge wetlands
FW2911 XETE-FERU: beargrass-red fescue, R6 E 257-86

FW30 Camas wetlands
FW3911 CACU-SEEP: Cusick's camas seepage, R6 E 255-86

FW40 Groundsel, beadlily wetlands
FW4111 CLUN(ALIN): queen's cup beadlily, scattered alder wetland, R6 E TP-279-87
FW4211 SETR: arrowleaf groundsel wetland, R6 E TP-279-87, R6 NR TP-09-96
FW4212 EQAR: common horsetail, R6 NR TP-09-96
FW4213 ADPE: maidenhair fern, R6 NR TP-09-96
FW4221 ADPE-MTH-GP: maidenhair fern-Mount Hood-Gifford Pinchot, R6 NR TP-10-96
FW4222 EQAR-MTH-GP: common horsetail-Mount Hood-Gifford Pinchot, R6 NR TP-10-96
FW4223 LYAM: skunkcabbage, R6 NR TP-10-96
FW4224 MIGU: yellow monkeyflower, R6 NR TP-10-96
FW4225 OXALIS: Oregon oxalis-great oxalis, R6 NR TP-10-96
FW4226 PEFR2: coltsfoot, R6 NR TP-10-9
FW4227 SAAR4-SETR: brook saxifrage-arrowleaf groundsel, R6 NR TP-10-96
FW4228 SETR-ASMO: arrowleaf groundsel-few-flowered aster, R6 NR TP-10-96
FW4229 STCO4-ATFI: Cooley's hedgenettle-ladyfern, R6 NR TP-10-96
FW4230 STCO4-MIGU: Cooley's hedgenettle-yellow monkeyflower, R6 NR TP-10-96
FW4231 COAQ: cold-water corydalis, R6 NR TP-10-96

FW50 False hellebore, wetlands
FW5111 VERAT-HELA: false hellebore-common cowparsnip, R6 E 257-86
FW5121 VECA: California false hellebore, R6 E TP-279-87, R6 NR TP-09-96

FX4111 LECOW-RIM: Wallowa lewisia-rims, R6 E 255-86

FX Forbland

G Grassland

GA **Annual grass vegetation**

GA10 Cheatgrass
GA20 Medusahead
GA30 Dogtail
GA40 Soft chess

GB **Bunchgrass vegetation**

GB11 Threeawn-sand dropseed
GB1121 SPCR-POSA3: sand dropseed-bluegrass, Daub '70
GB1122 ARLO3-POSA3: threeawn-bluegrass, Daub '70
GB1211 SPCR-TERRACE: sand dropseed river terrace, R6 E 255-86
GB1911 AGSP-SPCR-ARLO3: wheatgrass-sand dropseed-red threeawn, R6 E 255-8

GB20 Needlegrass
GB2121 STOC-POSA3: needlegrass-bluegrass, Daub '70
GB2122 STOC-POSA3-ERNI: needlegrass-bluegrass-eriogonum, Daub '70

GB30 Squirreltail
GB40 Wheatgrass
GB41 Bluebunch wheatgrass, resource inventory, R6 E TP 036-92
GB4111 AGSP-ERHE: bluebunch wheatgrass-Wyeth's buckwheat, R6 E 255-86
GB4112 AGSP-POSA3-SCAN: wheatgrass-bluegrass-narrow-leaved skullcap, R6 E 255-86
GB4113 AGSP-POSA3-BASALT: wheatgrass-Sandberg's bluegrass-basalt, R6 E 255-86
GB4114 AGSP-POSA3-ASCU4: wheatgrass-Sandberg's bluegrass-Cusick's milkvetch, R6 E 255-86
GB4115 AGSP-POSA3-ERPU: wheatgrass-Sandberg's bluegrass-shaggy fleabane, R6 E 255-86
GB4116 AGSP-POSA3-GRANITE: wheatgrass-Sandberg's bluegrass-granite, R6 E 255-86
GB4117 AGSP-POSA3-PHCO2: wheatgrass-Sandberg's bluegrass-Snake River phlox, R6 E 255-86
GB4118 AGSP-POSA3-OPPO: wheatgrass-Sandberg's bluegrass-prickly pear, R6 E 255-86
GB4121 AGSP-POSA3: wheatgrass-bluegrass, Daub '70
GB4122 AGSP-FEID: wheatgrass/fescue, Daub '70

GB42 Whitmar wheatgrass (seeded or native)
GB43 Crested wheatgrass (seeded)
GB4911 AGSP-POSA3-DAUN: wheatgrass scabland, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92

GB4912 AGSP-FEID-DEEP/GENT: bunchgrass, deep soil, gentle, R6 AG 3-1
GB4913 AGSP-POSA3-SHAL/STP: bunchgrass, shallow soil, steep, R6 AG 3-1
GB4914 AGSP-FEID-DEEP/STP: bunchgrass, deep soil, steep, R6 AG 3-1

GB50 Fescue, resource inventory
GB5121 SYAL/FEID-LUSE: snowberry/Idaho fescue-lupine. Daub '70, R6 E 255-86
GB5122 FEID-RONU: Idaho fescue-rose, Daub '70
GB5123 FEID-HICY: Idaho fescue-hieraceum, Daub '70
GB59 Fescue-wheatgrass grasslands, R6 E TP 036-92
GB5911 FEID-KOCR-RIDGE: Idaho fescue-prairie junegrass-ridges, R6 E 255-86
GB5912 FEID-KOCR-MOUND: Idaho fescue-prairie junegrass-mounds, R6 E 255-86
GB5913 FEID-KOCR-HIGH: Idaho fescue-prairie junegrass-high elev., R6 E 255-86
GB5914 FEID-KOCR-LOW: Idaho fescue-prairie junegrass-low elev., R6 E 255-86
GB5915 FEID-AGSP-RIDGE: Idaho fescue-bluebunch wheatgrass ridges, R6 E 55-86
GB5916 FEID-AGSP-LUSE: Idaho fescue-bluebunch wheatgrass-silky lupine, R6 E 255-86
GB5917 FEID-AGSP-BASA: Idaho fescue-bluebunch wheatgrass-balsamroot, R6 E 255-86
GB5918 FEID-AGSP-PHCO2: Idaho fescue-wheatgrass-Snake River phlox, R6 E 255-86

GB5919	SYAL/FEID-KOCR: snowberry/Idaho fescue-prairie junegrass, R6 E 255-86
GB5920	FEID-DAIN-CAREX: Idaho fescue-timber oatgrass-sedge, R6 E 255-86
GB5921	FEID-CAHO: Idaho fescue-Hood's sedge, R6 E 255-86
GB5922	FEID-CAGE: Idaho fescue-elk sedge, R6 E 255-86
GB60	Rough fescue
GB70	Giant wildrye
GB7111	ELCI: basin wildrye, R6 E 255-86
GB7121	ELCI-DIST: giant rye/saltgrass, Daub '70
GB90	Bunchgrass scabland, resource inventory
GB9111	POSA-DAUN: bluegrass-onespike oatgrass, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92
GB99	Scabland (Poa, Danthonia), R6 E 104-85
GBB0	Bunchgrass, biscuit swale
GBB911	Biscuit-scabland complex, R6 AG 3-1
GBB921	Complex of GB5912 and GB9111 biscuit-scabland, R6 E 255-86
GBC0	Bunchgrass with a few scattered conifers
GBFX	Snake River grass-forb, resource inventory
GBRR	Bunchgrass on very rocky sites with little vegetation
GBRS	Bunchgrass on steep, stony sites with little vegetation
GBRX	Bunchgrass on rocky or steep sites with little vegetation
GBS0	Bunchgrass with a few scattered shrubs
GBX104	Malheur(04) 7A: slope less than 30 percent, GB49 11, GB49 12
GBX204	Malheur(04) 7B: slope 30-70 percent, GB49 13, GB49 14
GBX304	Malheur(04) 7C: slope less 30 percent, serpentine, GB49 11, GB49 12
GBX404	Malheur(04) 7D: slope 30-70 percent, serpentine, GB49 13, GB49 14
GM	**Moist (mesic) grassland within forest zone**
GM10	Needlegrass interior valley, Willamette, Puget Sound
GM20	Red fescue interior valley, Willamette, Puget Sound; coastal
GM30	Oatgrass-needlegrass interior valley
GM40	Flood-plain grasslands
GM4111	CACA: bluejoint ryegrass, R6 E TP-279-87, R6 NR TP-09-96
GM4112	ELGL: blue wildrye, R6 E TP 279-87
GM4121	ELGL-BROMUS: blue wildrye-bromegrass, R6 E 257-86
GM80	Coastal grassland
GMB9	Puget mima mounds
GMC9	Moist (mesic) grassland with some scattered conifers
GMFX	Mesic grass-forb, resource inventory

GR	**Rhizomatous grass or sedge vegetation**
GR10	Low sedge
GR20	Blue gramma
GR30	Saltgrass
GR3121	DIST: saltgrass, Daub '70
GR80	Beachgrass
GR81	Foredune (sandy dune geology) beachgrass
GR8111	Foredune and beachgrass, Siuslaw
GR82	Hummocks (sand dune geology) beachgrass
GR8211	Hummocks, occasionally wet: dense beachgrass/lupine/bluegrass, Siuslaw
GR8212	Hummocks, occasionally wet, unstable: open beachgrass/lupine, Siuslaw
GR8213	Hummocks, dry, eroding: beachgrass/lupine/bluegrass, Siuslaw
GR83	Dune slip face: beachgrass
GR8311	Dune slip face: beachgrass, stabilized, Siuslaw
GS	**Subalpine or alpine grassland**
GS10	Alpine bunchgrass, R6 E TP 036-92
GS11	Green fescue, resource inventory, R6 E TP 036-92
GS1111	FEVI-CAHO: green fescue-Hood's sedge, R6 E 255-86
GS1112	FEVI-LULA2: green fescue-spurred lupine, R6 E 255-86
GS12	Alpine Idaho fescue, R6 E TP 036-92
GS1211	FEID-ALPINE: subalpine Idaho fescue, R6 AG 3-1
GS13	Alpine-rough fescue
GS20	Alpine-tall sedge
GS30	Alpine-short, dense sedge
GS3911	CAGE-ALPINE: subalpine elk sedge, R6 AG 3-1
GS40	Alpine-short, thin sedge
GS50	Alpine needlegrass, squirreltail grass
GSC0	Grasslands, subalpine to alpine with scattered conifers
GSXX	Alpine xeric grasslands, resource inventory
GSY104	Malheur(04) 9C: slope less than 30 percent, serpent, SD91 11, CJS8 11, GS91 11
GSY204	Malheur(04) 9D: 30-70 percent, serpentine, SD91 11, CJS8 11, GS91 11
GX	Grassland
H	**Hardwood Forest**
HA	**Alder, red**
HAC0	Alder with important associated conifers
HAF0	Alder with forb-dominated ground vegetation
HAF1	Alder/swordfern
HAF2	Alder/short forbs
HAF211	ALRU/PEFRP: red alder/sweet coltsfoot, R6 NR TP-09-96
HAF221	ALRU/ELGL: red alder/blue wildrye, R6 NR TP-10-96

HAF222	ALRU/OXALIS: red alder/oxalis, R6 NR TP-10-96
HAF223	ALRU/PEFR2: red alder/coltsfoot, R6 NR TP-10-96
HAF224	ALRU/STCO4: red alder/Cooley's hedgenettle, R6 NR TP-10-96
HAF225	ALRU/TOME-MOSI: red alder/piggyback polant-Siberian miner's lettuce, R6 NR TP-10-96
HAH0	Alder with important associated hardwoods
HAM0	Alder wetlands (moist to wet soil)
HAM1	Red alder-overflow bottomland
HAM2	White alder-overflow bottomland
HAS0	Alder with shrub-dominated ground vegetation
HAS1	Alder/salmonberry, thimbleberry
HAS111	ALRU/RUPA: red alder/thimbleberry, R6 NR TP-10-96
HAS112	ALRU/RUSP/OXALIS: red alder/salmonberry/oxalis, R6 NR TP-10-96
HAS113	ALRU/RUSP/TOME: red alder/salmonberry/piggyback plant, R6 NR TP-10-96
HAS2	Alder/ninebark-snowberry
HAS211	ALRU/PHCA3: red alder/Pacific ninebark, R6 NR TP-09-96
HAS3	Red alder/vine maple
HAS311	ALRU/ACCI: red alder/vine maple, R6 NR TP-10-96
HAS4	Red alder/devil's club
HAS411	ALRU/OPHO: red alder/devil's club, R6 NR TP-10-96
HAZ212	Siuslaw(12): pure alder (TM type map, temporary)
HAZ312	Siuslaw(12): alder-conifer, alder predominant (TM type map, temp)
HB	**Bigleaf maple**
HBM0	Bigleaf maple wetlands (moist to wet soil)
HBM1	Bigleaf maple-overflow bottomlands, moist
HBS0	Bigleaf maple with shrub-dominated ground vegetation
HBS1	Bigleaf maple/vine maple talus slopes
HBS2	Bigleaf maple/hazel/swordfern
HC	**Cottonwood, ash, bottom land, overflow bottomland**
HCC0	Cottonwood, ash bottomland with some scattered conifers
HCC111	POTR2-PIEN/ALIN-COST: cottonwood-spruce/alder-dogwood, R6 E TP-279-87
HCG0	Black cottonwood/grass, sedge
HCG111	POTR2/CAEU: black cottonwood/widefruit sedge wetlands, R6 E TP-279-87
HCS0	Cottonwood-willow with shrub-dominated ground vegetation
HCS1	Cottonwood-willow, R6 NR TP-10-96
HCS111	POTR2/ALIN/CALA3: black cottonwood/alder/woolly sedge, R6 E TP-279-87
HCS112	POTR2/SALA2: black cottonwood/Pacific willow, R6 NR TP-09-96
HCS113	POTR2/ALIN-COST: black cottonwood/mountain alder-red osier dogwood, R6 NR TP-09-96, MISC#54
HCS114	POTR2/ACGL: black cottonwood/Rocky Mountain maple, R6 NR TP-09-96
HCS121	POTR2/CIDO: cottonwood/cicuta wetlands, Daub '70

HCS2	Ash-willow
HCS3	Black cottonwood/snowberry, spiraea
HCS311	POTR2/SYAL/POPR: black cottonwood/snowberry/bluegrass wetlands, R6 E TP-279-87, R6 NR TP-09-96
HCXX	Black cottonwood, resource inventory
HL	**Live oak, canyon, over 16 feet tall; less than 16 feet, see SC30**
HLRR	Live oak on rocky sites with little ground vegetation
HLRS	Live oak on steep, stony sites with little ground vegetation
HLRX	Live oak on rocky or steep sites with little ground vegetation
HM	**Madrone**
HMRR	Madrone on rocky sites with little ground vegetation
HMRS	Madrone on steep sites with little ground vegetation
HMRX	Madrone on rocky or steep sites with little ground vegetation
HMS0	Madrone with shrub-dominated ground vegetation
HMS1	Madrone/canyon live oak
HO	**Oak, Oregon white, California black**
HOF0	Oak with forb-dominated ground vegetation, resource inventory
HOF1	Oak/low forb (strawberry, yarrow)
HOG0	Oak with grass-dominated ground vegetation
HOG1	Oak/bunchgrass
HOG111	QUGA/AGSP: Oregon white oak/bluebunch wheatgrass, PNW-GTR-359
HOG2	Oak/rhyzomatous grass
HOG211	QUGA/CARU-CAGE: Oregon white oak/pinegrass-elk sedge, PNW-GTR-359
HOG3	Oak/annual grass
HOS0	Oak with shrub-dominated ground vegetation, resource inventory
HOS1	Oak/poison oak
HOS2	Oak/cherry, snowberry
HOS3	Oak/serviceberry, snowberry
HOS311	QUGA/COCO2-SYAL: Oregon white oak/hazelnut-common snowberry, PNW-GTR-359
HOS4	Oak/hazel
HOS5	Oak/deerbrush
HOS6	Oak bitterbrush
HQ	**Quaking aspen**
HQC0	Quaking aspen with occasional conifers
HQC111	POTR-PICO/SPDO/FORB: aspen-lodgepole/spiraea-forb, R6 E TP-279-87
HQC112	POTR-PICO/ARUV: quaking aspen-lodgepole/bearberry, R6 E TP-279-87
HQG0	Aspen/grass, dryland
HQG1	Quaking aspen/pinegrass, resource inventory
HQG111	POTR/CARU: quaking aspen/pinegrass, R6 E 132-83, PNW-GTR-360

HQM0 Quaking aspen wetlands (moist to wet soils), resource inventory
HQM1 Aspen/grass wetland
HQM121 POTR/ELGL: quaking aspen/blue wildrye, R6 E TP-279-87
HQM122 POTR/POPR: quaking aspen/Kentucky bluegrass, R6 NR TP-09-96
HQM123 POTR/CACA: quaking aspen/bluejoint reedgrass, R6 NR TP-09-96

HQM2 Aspen/tall sedge (*Carex nebraskensis*) wetland
HQM211 POTR/CALA3: quaking aspen/woolly sedge, R6 E TP-279-87, R6 NR TP-09-96

HQM3 Aspen/short sedge wetland
HQM4 Aspen/shrub wetland
HQM411 POTR-PICO/SPDO/CAEU: aspen-lodgepole/Douglas' spirea/widefruit, R6 E TP-279-87

HQS0 Quaking aspen with shrub-dominated ground vegetation
HQS1 Aspen/hawthorn
HQS2 Aspen/snowberry, resource inventory
HQS211 POTR/SYAL: quaking aspen/snowberry, R6 E 132-83, PNW-GTR-360
HQS221 POTR/SYAL/ELGL: quaking aspen/snowberry, blue wildrye, R6 E TP-279-87, R6 NR TP-09-96

HQS3 Quaking aspen/sagebrush

HT Tanoak over 16 feet tall; less than 16 feet see SC30

HTC0 Tanoak with important conifers, resource inventory
HTC1 Tanoak-redwood
HTC2 Tanoak-western hemlock
HTC3 Tanoak-Port-Orford-cedar
HTC4 Tanoak-white fir

HTH0 Tanoak with important associated hardwoods
HTH1 Tanoak-canyon live oak, resource inventory
HTH2 Tanoak-California laurel
HTH3 Tanoak-vine maple

HTRX Tanoak on rocky or steep sites with little ground vegetation
HTRR Tanoak on rocky sites with little ground vegetation
HTRS Tanoak on steep slopes with little ground vegetation

HTS0 Tanoak with shrub-dominated ground vegetation
HTS1 Tanoak/evergreen huckleberry, resource inventory
HTS2 Tanoak/rhododendron, resource inventory

HTS3 Tanoak/Oregongrape, salal, resource inventory
HTS4 Tanoak/poison oak
HTS5 Tanoak/California coffyberry, resource inventory

HX Hardwood forest

M Meadow, grass-sedge

MD Dry meadow (water table available part of the growing season)

MD10 Cusick bluegrass dry meadow
MD1911 POCU-DRY MEAD: Cusick bluegrass dry meadow, R6 E 104-85, R6 E TP-279-87

MD20 Tufted hairgrass dry meadow
MD30 Kentucky bluegrass dry meadow
MD3111 POPR-DRY MEAD: Kentucky bluegrass dry meadow, R6 E 79-004, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54

MD3112 POPR-RIDGE: Kentucky bluegrass meadows on ridges, R6 E 255-86

MDC0 Dry meadow with some scattered conifers

MDMW Grass-sedge dry, moist and wet meadows, resource inventory

MM Moist meadow (water table available all growing season)

MM10 Tufted hairgrass moist meadow
MM19 Tufted hairgrass moist meadow, R6 E 104-85
MM1911 DECE-CANE: tufted hairgrass-Nebraska sedge, R6 E 79-004
MM1912 DECE: tufted hairgrass moist meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MM1921 DECE-MOIST CAREX: tufted hairgrass moist meadow sedges, R6 E 255-86
MM1922 DECE-WET CAREX: tufted hairgrass wet meadow sedges, R6 E 255-86

MM20 Moist meadow-tall sedge
MM2911 CALA3: woolly sedge moist meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, MISC#54
MM2912 CANE: Nebraska sedge moist meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, MISC#54
MM2913 CAEU: widefruit sedge moist meadow, R6 E TP-279-87
MM2914 CAAQ: aquatic sedge moist meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MM2915 CASI2: shortbeak sedge moist meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MM2916 CALU: woodrush sedge moist meadow, R6 NR TP-09-96
MM2917 CAUT: bladder sedge moist meadow, R6 NR TP-09-96, R6 E TP-279-87, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MM2918 CACU2: Cusick's sedge moist meadow, R6 NR TP-09-96
MM2919 CALEL2: densely tufted sedge moist meadow, R6 NR TP-09-96
MM2920 CALA4: slender sedge moist meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8901, MISC#54
MM2921 CAAM: big-leaved sedge moist meadow, R6 NR TP-09-96
MM2922 CANU4: torrent sedge moist meadow, R6 NR TP-09-96

MM2924 SCMI: small-fruited bullrush moist meadow, R6 NR TP-09-96
MM2925 GLEL: tall mannagrass moist meadow, R6 NR TP-09-96
MM2931 CALE5: lenticular sedge, R6 NR TP-10-96

MM30 Moist meadow-short sedge
MM3911 CAREX-CABI: sedge-marshmarigold, R6 E 257-86

MM40	Moist meadow-redtop
MM50	Moist meadow-spikesedge
MM80	Moist meadow-coastal/grasses, forbs
MM90	Moist Kentucky bluegrass meadow, R6 E 104-85
MMB0	Meadow complex/wet-moist-dry pothole
MMB8	Deflation plain potholes/slough sedge-brown rush-red fescue, Siuslaw
MMC0	Moist meadow with some scattered conifers
MMX104	Malheur(04) 10A: slope less than 15 percent, MD, MM, MW (meadows)
MS	**Subalpine/alpine moist meadows**
MS10	Subalpine dry grass, sedge, forb meadows
MS1111	CABR: brewer sedge dry subalpine meadow, R6 E TP-279-87
MS20	Subalpine moist grass, sedge, meadows
MS2111	CANI2: black sedge moist subalpine meadow, R6 E TP-279-87
MS2112	CASC5-CANI2-DECE: Holm's-black sedge-hairgrass subalpine meadow, R6 E TP-279-87
MS25	Subalpine moist forb meadows
MS30	Subalpine wet grass, sedge, forb meadows
MS3111	CASC5: Holm's sedge subalpine wet meadow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-9501, INT-288, MISC#54
MSC0	Subalpine to alpine meadows with some scattered conifers
MSXX	Subalpine/alpinegrass-sedge meadows, resource inventory
MT	**Tule meadow (standing water most or all of growing season)**
MT19	Bullrush
MT1911	CAREX-SCIRPUS (HYDRIC): sedge-bullrush (hydric), R6 E 257-86
MT1921	SCMI: small-fruited bullrush, R6 NR TP-10-96
MT80	Cattail, bullrush
MT8111	Cattail-bullrush/water lily, water-weed, Siuslaw
MT99	Coastal saline water
MW	**Wet meadow (surface moist or wet all growing season), R6 E 104-85**
MW10	Wet meadow-tall sedge, R6 E 255-86
MW1911	CANE-JUBA: Nebraska sedge, R6 E 79-004
MW1921	SCMI(CAAM): smallfruit bullrush-bigleaf sedge, R6 E TP-279-87
MW1922	CASI3: Sitka sedge, R6 E TP-279-87
MW1923	CAVE: inflated sedge, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901
MW1924	CARO2: beaked sedge, R6 E TP-279-87
MW1925	CAIN3: green-fruited sedge, R6 E TP-279-87
MW20	Wet meadow-short sedge
MW2911	CALA4: slender bog sedge, R6 E TP-279-87

MW30	Wet meadow-rush
MW3911	JUNE: Nevada rush, R6 E TP-279-87
MW3912	JUBA2: Baltic rush, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MW40	Wet meadow-spike sedge
MW4911	ELPA2: few-flowered spikerush, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MW4912	ELPA: creeping spikerush, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
MW80	Wet meadow-coastal, fresh water
MW8111	Valley fill: slough sedge/skunk cabbage, red currant, Siuslaw
MW8112	Slough sedge/water lily-pondweed, cattail, Siuslaw
MW90	Wet meadow-coastal, salt spray influence
MWC0	West meadow, surface moisture, with some scattered conifers
MX	Meadow, grass-sedge,
N	**Nonvegetated Land (less than 10 percent potential vegetative cover)**
NA	**Avalanche paths, sparsely vegetated to nonvegetated**
NAC0	Avalanche paths with a few scattered conifers
NAS0	Avalanche paths with a few scattered shrubs or brush
NC	**Cinders, lava flow, mud flow, glacial wash (less than 10 percent vegetation)**
NCA0	Alpine-subalpine cinders, lava flow, mud flow, glacial wash
NCA1	Alpine-trees (whitebark pine, subalpine fir, mountain hemlock)
NCA111	PIAL-CINDERS: steep cinders, whitebark pine-mountain hemlock/hulsea, Willamette
NCA2	Alpine grass-sedge (cinders, lava, pumice)
NCA3	Alpine juniper (*Juniperous communis*)/cinders, lava, pumice
NCA4	Hulsea, cushion plants on cinders, lava flow, glacial wash
NCA411	HULSEA-CINDERS: alpine, steep cinders-hulsea, Willamette
NCC0	Cinders, lavas, outwash with scattered conifers
NCC1	Mountain hemlock-subalpine fir-whitebark pine-lodgepole/cinders, lava, pumice
NCC111	PIAL/PENST-LAVA: alpine, pumice-lava-whitebark pine/penstemon, Willamette
NCC2	Western hemlock, cinders, lava, pumice
NCC3	Douglas-fir-true fir, cinders, lava
NCC4	Douglas-fir-oak, cinders, lava
NCC5	Cinders, lava with lodgepole pine
NCC6	Cinders, lava with ponderosa pine
NCH0	Cinders, lavas, outwash with scattered hardwoods
NCH1	Mud-glacial flows with alder, aspen

NCS0	Cinders, lavas, outwash with scattered shrubs
NCS1	Cinders, lavas, outwash with vine maple
NCS111	SHRUB (LAVA): lava flows, scattered vine maple, R6 E 257-86
NCS2	Cinders, lavas, outwash with Sitka alder-willow
NF	**Flood plain periodically denuded of vegetation**
NFC0	Nonvegetated flood plain with scattered conifers
NFS0	Nonvegetated flood plain with scattered willows or shrubs
NI	**Ice fields, glaciers, ice caves, ice-dominated land**
NIT1	Ice tunnel or cave, twilight zone
NIT2	Ice tunnel or cave, zero light zone
NL	**Landform failure (natural slumps, avalanches)**
NM	**Mine tailings, dredgings, human-caused minimal vegetation potential**
NMC0	Mine tailings, dredgings with scattered conifers
NMC1	Mine tailings, dredgings, lodgepole pine
NMH0	Mine tailings, dredgings with scattered hardwoods
NMH1	Mine tailings, dredgings, cottonwood
NMH2	Mine tailings, dredgings, aspen
NMS0	Mine tailings, dredgings with scattered shrubs
NMS1	Mine tailings, dredgings with willow
NR	**Rocky land with minimal vegetation potential**
NRA0	Rocky land in alpine or subalpine locations
NRA1	Rocky land with alpine trees
NRA2	Rocky land with alpine grass-sedge
NRA3	Rocky land with alpine juniper
NRA311	JUCO-ALP, SCORIA: subalpine, steep scoria/dwarf juniper, Willamette
NRA4	Rocky land with alpine forbs
NRC0	Rock with scattered conifers
NRL0	Ledge or cliff, steeper than 200 percent (60 degrees)
NRL1	Ledge or cliff, smooth face, vertical distance less than 20 feet
NRL2	Ledge or cliff, smooth face, vertical distance more than 20 feet
NRL5	Ledge or cliff, broken face/ledges, vertical distance less than 20 feet
NRL6	Ledge or cliff, broken face/ledges, vertical distance more than 20 feet
NRL911	ROCK GARDEN (STEEP, ZERIC): steep, xeric rock garden, R6 E 257-86
NRL912	ROCK GARDEN (STEEP, MOIST): steep, moist rock garden, R6 E 257-86
NRNO	Rock, no vegetation
NRQ0	Quarry, rock pit
NRR0	Flat rock with scattered plants (less than 200 percent slope)
NRR911	ROCK GARDEN (FLAT, XERIC): scattered plants on rock, R6 E 257-86
NRS0	Rocky land with scattered shrubs or brush

NRT1	Tunnel or cave, twilight zone
NRT2	Tunnel or cave, zero light zone
NS	**Sand with minimal vegetation, shoreline or interior**
NSG0	Sand dunes with scattered grass
NSG1	Sand dune-wildrye-wheatgrass
NSG8	Coastal sand dune, rolling, partial beachgrass stability
NSN0	Open sand of any dunal character, no vegetation
NSN111	Pacific coast beach, Siuslaw
NSN2	Transverse ridge, sand dune system, no vegetation
NSN211	Transverse ridge, occasionally wet, winter stable, Siuslaw
NSN212	Transverse ridge, dry, moving sand, Siuslaw
NSN3	Oblique ridge, sand dune system, no vegetation
NSN311	Oblique ridge, fore slope, moving sand Siuslaw
NSN312	Oblique ridge, precipitation ridge, active sand, Siuslaw
NSN313	Oblique ridge, precipitation ridge, active, threat, vegetation, Siuslaw
NSN4	Parabola ridge, sand dune system, no vegetation
NT	**Talus land with minimal vegetation potential**
NTA0	Talus slopes in alpine or subalpine locations
NTA1	Talus land with alpine trees: pine, mountain hemlock, subalpine fir
NTA2	Talus land with alpine grass, sedge
NTA3	Talus land with alpine juniper
NTA4	Talus land with alpine forb
NTC0	Talus land with scattered conifers
NTH0	Talus slopes with scattered hardwoods
NTH1	Talus land with bigleaf maple
NTH2	Talus land with white oak
NTS0	Talus slopes with scattered shrubs
NTS1	Talus land with cherry-snowberry, mock orange
NTS111	PHLE2-TALUS: syringa-bordered talus strips, R6 E 255-86
NTS2	Talus-vine maple
NTS211	ACCI(TALUS): vine maple common on talus slopes, R6 E 257-86
NTS3	Talus-Klamath plum
NTS911	TALUS: talus slopes with little vegetation, R6 E 257-86
NX	Nonvegetated land, less than 10 percent vegetation cover, Resource Inventory
S	**Shrubland**
SC	**Chaparral, evergreen shrubland, forest zone and nonforest**

SC10	Snowbrush (ceanothus) chaparral
SC20	Manzanita chaparral
SC30	Oak Chaparral: tanoak, canyon live oak less than 16 feet tall
SC40	Mountain-mahogany chaparral
SC50	Yerbasanta-silktassel chaparral
SC60	Short shrub
SD	**Dry shrubland, sagebrush, nonforest zone shrubland not desert**
SD10	Low sage, black sage
SD1911	ARAR/FEID-AGSP: low sage/Idaho fescue-wheatgrass, R6 AG 3-1, R6 E TP 036-92
SD1912	ARAR/FEID: low sagebrush/Idaho fescue, R6 E 104-85
SD1913	ARAR/FEID-SIHY: low sage/Idaho fescue-squirreltail, R6 E 79-004
SD1921	ARNO/AGSP: black sage/wheatgrass, Bull. 35
SD1922	ARNO/FEID: black sage/Idaho fescue, Bull. 35
SD1924	ARAR/AGSP: low sage/wheatgrass, Bull. 35
SD1925	ARAR/FEID: low sage/Idaho fescue, Bull. 35
SD1926	ARTH/FEID: cleft-leaf low sage/Idaho fescue, Bull. 35
SD20	Big sage
SD21	Big sagebrush
SD2121	ARTR/AGSP: big sage/wheatgrass, Daub '70
SD2122	ARTR/FEID: big sage/fescue, Daub '70
SD2123	ARTR/STCO: big sage/needlegrass, Daub '70
SD2124	ARTR/POSA3: big sage/bluegrass, Daub '70
SD2131	ARLO/FEID: longlobe sage/Idaho fescue, Bull. 35
SD2133	ARTRW/POSA3: Wyoming big sage/Sandberg's bluegrass, Bull. 35
SD2134	ARTRW/SIHY: Wyoming big sage/squirreltail, Bull. 35
SD2135	ARTRW/STTH: Wyoming big sage/Thurber's needlegrass, Bull. 35
SD2136	ARTRW/AGSP: Wyoming big sage/wheatgrass, Bull. 35
SD2137	ARTRW/STCO: Wyoming big sage/needle-and-thread, Bull. 35
SD2138	ARTRT/AGSP: basin big sage/wheatgrass, Bull. 35
SD2139	ARTRT/FEID: basin big sage/Idaho fescue, Bull. 35
SD2140	ARTRT/STCO: basin big sage/needle-and-thread, Bull. 35
SD22	Threetip sagebrush
SD2221	ARTR2/FEID: threetip sage/fescue, Daub '70
SD2222	ARTR2/STCO: threetip sage/needlegrass, Daub '70
SD2223	ARTR2/AGSP: threetip sage/wheatgrass, Daub '70
SD2231	ARTR2/AGSP-ID: threetip sage/wheatgrass-Idaho, Bull. 35
SD2232	ARTR2/FEID-ID: threetip sage/Idaho fescue-Idaho, Bull. 35
SD23	Silver sagebrush
SD2311	ARTR/POCU: big sage/Cusick bluegrass, R6 E TP-279-87
SD2321	ARVI/FEID: mountain silver sage/Idaho fescue, Bull. 35
SD2911	ARTRV/FEID-AGSP: big sage/Idaho fescue-wheatgrass, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92
SD2912	ARTR/BUNCHGRASS: big sagebrush/bunchgrass, R6 E 104-85

SD2913 ARTR-PUTR/FEID-AGSP: big sage-bitterbrush/bunchgrass, R6 E 104-85
SD2914 ARTR/STOC-RHYO: sagebrush/needlegrass-rhyolite pumice, R6 E 104-85
SD2915 ARTRV/CAGE: mountain big sagebrush/elk sedge, R6 E 255-86
SD2916 ARTRV-PUTR/FEID: mountain big sage-bitterbrush/Idaho fescue, R6 E 255-86
SD2917 ARTRV-SYOR: mountain big sagebrush-mountain snowberry, R6 E 255-86
SD2921 ARTRV/AGSP: mountain big sage/wheatgrass, Bull. 35
SD2922 ARTRV/FEID: mountain big sage/Idaho fescue, Bull. 35
SD2923 ARTRV/STCO: mountain big sage/needle-and-thread, Bull. 35
SD2924 ARTRV-SYOR/AGSP: mountain big sage-mountain snowberry/wheatgrass, Bull. 35
SD2925 ARTRV-SYOR/FEID: mountain big sage-mountain snowberry/Idaho fescue, Bull. 35
SD2926 ARTRV-SYOR/CAGE: mountain big sage-mountain snowberry/elk sedge, Bull. 35
SD2927 ARTRVX/AGSP: Xeric mountain big sage/wheatgrass, Bull. 35
SD2928 ARTRVX/FEID: Xeric mountain big sage/Idaho fescue, Bull. 35

SD30 PUTR-PERA3-SYOR: bitterbrush, squaw apple-mountain snowberry, R6 E 255-86
SD31 Bitterbrush, R6 AG 3-1
SD3111 PUTR/FEID-AGSP: bitterbrush/Idaho fescue-wheatgrass, R6 E 255-86, R6 E TP 036-92
SD3112 PUTR/AGSP: bitterbrush/bluebunch wheatgrass, R6 E 255-86
SD3121 PUTR/STCO-DAUB: bitterbrush/needlegrass, Daub '70
SD3122 PUTR/AGSP-DAUB: bitterbrush/wheatgrass, Daub '70
SD3123 PUTR/FEID-DAUB: bitterbrush/fescue, Daub '70
SD3131 PUTR/AGSP-ID: bitterbrush/wheatgrass-Idaho, Bull. 35
SD3132 PUTR/STCO-ID: bitterbrush/needle-and-thread, Idaho, Bull. 35
SD3311 PUTR/STOC-CAPE: bitterbrush/needlegrass-long stolon sedge, R6 E 104-85

SD40 Mountain-mahogany, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92
SD41 Mountain-mahogany/bunchgrass
SD4111 CELE/FEID-AGSP: mountain-mahogany/fescue-wheatgrass, R6 E TP 036-92

SD4112 CELE/AGSP: mountain-mahogany/wheatgrass, Bull. 35
SD42 Mountain-mahogany/rhyzomatous grass
SD43 Mountain-mahogany/sagebrush
SD44 Mountain-mahogany/snowberry
SD49 Mountain-mahogany, R6 E 255-86
SD50 Hackberry-hawthorn
SD5121 CRDO/SYAL: hawthorn/common snowberry, Daub '70
SD5611 CERE2/AGSP: netleaf hackberry/bluebunch wheatgrass, R6 E 255-86
SD5621 CERE2/BRTE: netleaf hackberry/cheatgrass, Daub '70

SD60 Smooth sumac
SD6121 RHGL/AGSP: smooth sumac/wheatgrass, Daub '70, R6 E 255-86
SD6122 RHGL/SPCR: smooth sumac/sand dropseed, Daub '70
SD6123 RHGL/ARLO: smooth sumac/threeawn, Daub '70
SD65 GLNE/AGSP: spiny green-bush/bluebunch wheatgrass, R6 E 255-86

SD70	Rabbitbrush
SD80	Snowberry-cherry-rose
SD90	Scabland dominated by shrubs, Resource Inventory
SD91	Rigid sage
SD9111	ARRI/POSA3-SCAB: rigid sage/bluegrass scabland, R6 AG 3-1, R6 E 255-86, R6 E TP 036-92
SD9112	ARRI/POSA3-ID: rigid sage/Sandberg's bluegrass, Bull. 35
SD9121	ARRI/POSA3-DAUB: rigid sage/bluegrass, Daub '70
SD9131	ARRI/POSA3-LOMA: rigid sage/bluegrass-lomatium, scabland, R6 E 133-83
SD92	Low sage scabland
SD9211	ARAR-HAST/POSA3: low sage/goldenweed/bluegrass, R6 E 79-004
SD9212	ARAR/POSA3-DAUN: low sage/bluegrass-oatgrass, R6 E 79-004
SD9221	ARAR/POSA3: low sage/bluegrass scabland, R6 E TP 036-92
SD9222	ARAR/POSA3-ID: low sage/Sandberg's bluegrass-Idaho, Bull. 35
SD93	Shrubby eriogonum scablands
SD9321	ERNI/POSA3: *Eriogonum niveum/Poa secunda*, Daub '70
SD9322	ERMI/PHOR: *Eriogonum microthecum/Physaria*, Daub '70, R6 E 255-86
SD9323	ERUM/STIPA-PUM: buckwheat flats, rhyolite pumice, R6 E 104-85
SDB9	Biscuit-scabland complex, sagebrush, R6 AG 3-1
SDC0	Dry shrubland, sagebrush, with scattered conifers
SDXX	Xeric shrubs, Resource Inventory
SDX104	Malheur(04) 8A: less than 30 percent/SD19 11, SD29 11, SD39, SD49, CPS1 11, CJS1 11, CJS2 11
SDX204	Malheur(04) 8B: 30-70 percent/SD19 11, SD29 11, SD39, SD49, CPS1 11, CJS1 11, CJS2 11
SDY104	Malheur(04) 9A: less 30 percent slope/SD91 11, CJS8 11, GB91 11. SCAB
SDY204	Malheur(04) 9B: slope 30-70 percent/SD91 11, CJ38 11, GB91 11. SCAB
SM	**Moist (mesic) shrubland, forest zone shrubs, and shrubland**
SM10	Ninebark, R6 AG 3-1
SM1111	PHMA-SYAL: ninebark-snowberry, R6 E TP 036-92
SM19	Ninebark, R6 E 255-86
SM20	Alder snow slides, R6 AG 3-1, R6 E TP 036-92
SM30	Cherry-mockorange-snowberry-serviceberry-rose-oceanspray-ceanothus
SM31	Snowberry shrubland, R6 AG 3-1, R6 E TP 036-92
SM3111	SYAL-ROSA: common snowberry-rose, R6 E 255-86,
SM32	SYOR: mountain snowberry shrubfields, R6 E 255-86, R6 E TP 036-92
SM3911	SHRUB BOTTOMS: mixed shrub bottoms, R6 E TP-279-87
SM40	Big huckleberry
SM50	Salmonberry-blackberry
SM5911	RUPA/POPH: thimbleberry-pokeweed fleeceflower, R6 E 257-86
SM80	Coastal, west-side shrubs
SM81	Tall shrub
SM8111	ALSI(ROCKY SOIL): Sitka, alder on rocky soil, R6 E 257-86
SM8112	ACCI(ROCKY SOIL): vine maple on rocky soil, R6 E 257-86

SM82	Mid shrub
SM83	Short shrub
SM84	Gorse
SM90	Scabland dominated by mesic shrubs
SMB0	Biscuit-scabland complex, moist shrub-eriogonum
SMC0	Moist (mesic) shrubland in forest zone with scattered conifers
SMXX	Mesic shrub, Resource Inventory
SS	**Subalpine and alpine shrubland**
SS10	Alpine heath-heather
SS1911	PHEM: red mountain heath meadow, R6 E TP-279-87
SS20	Alpine mountain juniper
SS30	Alpine deciduous shrub
SS40	Alpine sage
SS4911	ARTRV/CAGE: alpine sage/elk sedge, R6 AG 3-1, R6 E TP 036-92
SS4912	ARTRS/CAGE-ID: alpine sage/elk sedge, Bull. 35
SS4913	ARTRS/BRCA: alpine sage/mountain brome, Bull. 35
SS4921	ARAR/FERU: alpine low sage/red fescue, R6 E 79-004
SS50	Alpine low blueberry
SSC0	Subalpine shrubland with some scattered conifers
SSXX	Subalpine shrubs, Resource Inventory
SSX104	Malheur(04) 1A: SS49 11, GS39 11, GS12 11, CAG1 11, FS59 11
SW	**Shrub wetlands, shrubs less than 16 feet tall**
SW10	Willow wetlands
SW1111	SALIX/POPR: willow/Kentucky bluegrass, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8901
SW1112	SALIX/CALA3: willow/woolly sedge, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8901
SW1113	SALIX/CAEU: willow/widefruit sedge, R6 E TP-279-87
SW1114	SALIX/CAAQ: willow/aquatic sedge, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8901
SW1115	SALIX/CASI3: willow/Sitka sedge, R6 E TP-279-87
SW1116	SALIX/CARO2: willow/beaked sedge, R6 E TP-279-87
SW1117	SAEX: coyote willow, R6 E TP-279-87, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
SW1118	SALIX/ACCO: willow/monkshood, R6 E TP-279-87
SW1119	SALIX/DECE: willow/tufted hairgrass, R6 E TP-279-87
SW1120	SAEA-SACO2-BOG: eastwood-undergreen willow bog, R6 E TP-279-87
SW1121	SAEA-SACO2/CASC: eastwood-undergreen willow/sedge, R6 E TP-279-87, R6 NR TP-09-96
SW1122	SAEA-SABO/CANI2: eastwood-Booth willow/black sedge, R6 E TP-279-87
SW1123	SALIX/CAUT: willow/bladder sedge, R6 NR TP-09-96
W1131	SASI2: Sitka willow, R6 NR TP-10-96
SW1132	SASI2/PEFR2: Sitka willow/coltsfoot, R6 NR TP-10-96

SW20 Alder wetlands
SW21 ALRH: white alder, Daub '70
SW2111 ALSI/ATFI: Sitka alder/ladyfern, R6 NR TP-09-96
SW2112 ALSI/CILA2: Sitka alder/drooping woodreed, R6 NR TP-09-96
SW2113 ALSI/HELA: Sitka alder/cow parsnip, R6 NR TP-09-96
SW2114 ALIN/CAAM: mountain alder/big-leaved sedge, R6 NR TP-09-96
SW2115 ALIN/CAUT: mountain alder/bladder sedge, R6 NR TP-09-96
SW2116 ALIN/ATFI: mountain alder/ladyfern, R6 NR TP-09-96
SW2117 ALIN/EQAR: mountain alder/common horsetail, R6 NR TP-09-96, R4 ECOL-8901
SW2118 ALIN/CADE: mountain alder/Dewey's sedge, R6 NR TP-09-96
SW2119 ALIN/HELA: mountain alder/cow parsnip, R6 NR TP-09-96
SW2120 ALIN/POPR: mountain alder/Kentucky bluegrass, R6 NR TP-09-96
SW2121 ALIN/CACA: mountain alder/bluejoint reedgrass, R6 NR TP-09-96
SW2122 ALIN/SCMI: mountain alder/small-fruited bullrush, R6 NR TP-09-96
SW2123 ALIN/CALA3: mountain alder/woolly sedge, R6 NR TP-09-96
SW2131 ALIN/VAOC: mountain alder/ovalleaf huckleberry, R6 NR TP-10-96
SW2132 ALSI: Sitka alder, R6 NR TP-10-96
SW2211 ALIN/SYAL: mountain alder/common snowberry, R6 E TP-279-87, R6 NR TP-09-96
SW2212 ALIN/SPDO: mountain alder/Douglas spiraea, R6 E TP-279-87
SW2213 ALIN-SPRING: mountain alder-spring, R6 E TP-279-87
SW2214 ALIN-BANK: mountain alder-bank association, R6 E TP-279-87
SW2215 AIN/GLEL: mountain alder/tall mannagrass, R6 NR TP-09-96
SW2216 ALIN-COST/MESIC FORB: mountain alder-red-osier dogwood/mesic forb, R6 NR TP-09-96
SW2217 ALIN-RIBES/MESIC FORB: mountain alder-currants/mesic forb, R6 NR TP-09-96
SW25 Red alder as a shrubby lifeform
SW2511 ALRU: shrubby red alder, R6 NR TP-10-96
SW2512 ALRU/TRCA3: shrubby red alder/false bugbane, R6 NR TP-10-96
SW2911 ALIN: mountain alder shrubfield, R6 E TP-279-87

SW30 Hawthorn wetlands
SW3111 CRDO: Douglas hawthorn, R6 E TP-279-87, R6 NR TP-09-96, MISC#54
SW3120 CRDO/SYAL: hawthorn/snowberry, Daub '70
SW3121 POTR/CRDO/SYAL: aspen/hawthorn/snowberry, Daub '70
SW3122 CRDO/HELA: hawthorn/heracleum, Daub'70
SW3123 POTR/CRDO/HELA: aspen/hawthorn/heracleum, Daub '70

SW40 Spiraea, blueberry wetlands
SW4111 VAOC2/CASI3: bog blueberry/Sitka sedge, R6 E TP-279-87
SW4112 VAOC2/ALPA2: bog blueberry/few-flowered spikerush, R6 E TP-279-87
SW4113 SPDO: Douglas' spiraea, R6 E TP-279-87
SW4121 VACCI-SPDE/GRASS: huckleberry-spiraea-grass wetland, R6 E 257-86
SW4122 SPDO-VAUL/CAREX(HYDRIC): spiraea-huckleberry-sedge wetland, R6 E 257-86
SW4123 SPIRAEA-SALIX/CAREX: spiraea-sedge wetland, R6 E 257-86
SW4131 COST: red osier dogwood, R6 NR TP-10-96
SW4132 VAAL/VAOV: Alaska huckleberry-ovalleaf huckleberry, R6 NR TP-10-96

SW50	Currant, shrubby cinquefoil
SW5111	RIBES/CLIA2: currants/drooping woodreed, R6 NR TP-09-96
SW5112	COST: red-oiser dogwood, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501, MISC#54
SW5113	POFR/DECE: shrubby cinquefoil/tufted hairgrass, R6 NR TP-09-96, R4 ECOL-8901, R4 ECOL-9501, MISC#54
SW5114	POFR/POPR: shrubby cinquefoil/Kentucky bluegrass, R6 NR TP-09-96, R4 ECOL-8901, R4 ECOL-9501
SW5121	RIBR-RUSP/OXALIS: stinkcurrent-salmonberry/oxalis, R6 NR TP-10-96
SW5122	RIBR-RUSP/PEFR2: stinkcurrent-salmonberry/coltsfoot, R6 NR TP-10-96
SW5123	RIBR-RUSP/TOME: stinkcurrent-salmonberry/piggyback plant, R6 NR TP-10-96
SW60	Sagebrush meadows (silver, mountain big sage)
SW6111	ARCA/DECE: silver sagebrush/tufted harigrass, R6 NR TP-09-96, R4 ECOL-8901
SW6112	ARCA/POPR: silver sagebrush/Kentucky bluegrass, R6 NR TP-09-96, R4 ECOL-8501, R4 ECOL-8901, R4 ECOL-9501
SW6113	ARTRV/POCU: mountain big sagebrush/Cusick's bluegrass, R6 NR TP-09-96
SW70	ACCI: vine maple types, R6 NR TP-10-96
SW7111	ACCI-ALIN: vine maple-mountain alder, R6 NR TP-10-96
SW7112	ACCI/STCO4: vine maple/Cooley's hedgenettle, R6 NR TP-10-96
SW7113	OPHO: devil'sclub, R6 NR TP-10-96
SW80	Coastal shrub wetlands (*Salix, Myrica*)
SW81	Coastal shrubs in a deflation plain
SW8111	Deflat; plain, high water: willow-wax myrtle, salal, pine, Siuslaw
SW8112	Deflat; plain, high water: salal-evergreen huckleberry, willow, Siuslaw
SWC0	Wet shrubland, shrub meadows with some scattered conifers
SWXX	Wet shrubland, Resource Inventory
SX	Shrubland
TX	**Tundra**
W	**Water-covered areas**
WE	**Estuary systems-interface between fresh and saline water**
WE10	Bar-built geology-sand dune estuarial system
WE11	Bar-built fresh-saline water highly stratified
WE12	Bar-built fresh-saline water moderately mixed
WE13	Bar-built fresh-saline water well mixed
WE1311	Bar-built, well mixed saline, active flood plain, Siuslaw
WE1319	Bar-built, well mixed saline, tidal exposed sandy bottom
WE1329	Bar-built, well mixed saline, tidal exposed clay bottom
WE1339	Bar-built, well mixed saline, tidal exposed stony bottom
WE1359	Bar-built, well mix saline, tidal salt marsh (eelgrass)
WE20	Drowned river estuarial system
WE21	Drowned river/fresh-saline water highly stratified
WE22	Drowned river/fresh-saline water moderate mixed
WE23	Drowned river/fresh-saline water well mixed

WE31	Fjord/fresh-saline water highly stratified
WE32	Fjord/fresh-saline water moderately mixed
WE33	Fjord/fresh-saline water well mixed
WE30	Fjord type of estuarial system
WE40	Tectonic (faulted) estuarial system
WE41	Tectonic/fresh-saline water highly stratified
WE42	Tectonic/fresh-saline water moderately mixed
WE43	Tectonic/fresh-saline water well mixed
WL	**Lake, pond, impoundment, nonmoving water**
WL10	Perennial water, no ice cover during average year
WL11	Perennial, no ice cover, less than 5 acres
WL12	Perennial, no ice cover, 5-25 acres
WL13	Perennial, no ice cover, 25-100 acres
WL14	Perennial, no ice cover, 100-500 acres
WL15	Perennial, no ice cover, over 500 acres
WL20	Perennial, ice cover less than 30 days, average year
WL21	Perennial, ice less 30 days, less than 5 acres
WL22	Perennial, ice less 30 days, 5-25 acres
WL23	Perennial, ice less 30 days, 25-100 acres
WL24	Perennial, ice less 30 days, 100-500 acres
WL25	Perennial, ice less 30 days, over 500 acres
WL30	Perennial, ice cover 30-90 days during average year
WL31	Perennial, ice 30-90 days, less than 5 acres
WL32	Perennial, ice 30-90 days, 5-25 acres
WL33	Perennial, ice 30-90 days, 25-100 acres
WL34	Perennial, ice 30-90 days, 100-500 acres
WL35	Perennial, ice 30-90 days, over 500 acres
WL40	Perennial, ice cover 90-150 days, during average year
WL41	Perennial, ice 90-150 days, less than 5 acres
WL42	Perennial, ice 90-150 days, 5-25 acres
WL43	Perennial, ice 90-150 days, 25-100 acres
WL44	Perennial, ice 90-150 days, 100-500 acres
WL45	Perennial, ice 90-150 days, over 500 acres
WL50	Perennial, ice cover 150-210 days during average year
WL51	Perennial, ice cover 150-210 days, less than 5 acres
WL52	Perennial, ice cover 150-210 days, 5-25 acres
WL53	Perennial, ice cover 150-210 days, 25-100 acres
WL54	Perennial, ice cover 150-210 days, 100-500 acres
WL55	Perennial, ice cover 150-210 days, over 500 acres
WL60	Perennial, ice cover longer than 210 days, average year
WL61	Perennial, ice longer 210 days, less than 5 acres
WL62	Perennial, ice longer 210 days, 5-25 acres
WL63	Perennial, ice longer 210 days, 25-100 acres
WL64	Perennial, ice longer 210 days, 100-500 acres
WL65	Perennial, ice longer 210 days, over 500 acres
WL90	Intermittent lake, pond, impoundment

WO	**Oceans, seas, saline water bodies**
WO10	Deep water, abyss
WO20	Ocean intertidal beach
WO30	Oceanic continental shelf
WR	**Running water - stream, river, creek, ditch**
WR10	Perennial, max mo. mean temperature less than 45 °F
WR11	Perennial, max mo. mean temp. less than 45 °F, less 1 percent grade
WR12	Perennial, max mo. mean temp. less than 45 °F, 1-3 percent grade
WR13	Perennial, max mo. mean temp. less than 45 °F, 3-6 percent grade
WR14	Perennial, max mo. mean temp. less than 45 °F, 6-12 percent grade
WR15	Perennial, max mo. mean temp. less than 45 °F, greater than 12 percent grade
WR20	Perennial, max mo. mean temperature 45-55 °F
WR21	Perennial, max mo. temp. 45-55 °F, less than 1 percent grade
WR22	Perennial, max mo. temp. 45-55 °F, 1-3 percent grade
WR23	Perennial, max mo. temp. 45-55 °F, 3-6 percent grade
WR24	Perennial, max mo. temp. 45-55 °F, 6-12 percent grade
WR25	Perennial, max mo. temp. 45-55 °F, greater than 12 percent grade
WR30	Perennial, max mo. mean temperature 55-65 °F
WR31	Perennial, max mo. temp. 55-65 °F, less than 1 percent grade
WR32	Perennial, max mo. temp. 55-65 °F, 1-3 percent grade
WR33	Perennial, max mo. temp. 55-65 °F, 3-6 percent grade
WR34	Perennial, max mo. temp. 55-65 °F, 6-12 percent grade
WR35	Perennial, max mo. temp. 55-65 °F, greater than 12 percent grade
WR40	Perennial, max mo. mean temperature 65-75 °F
WR41	Perennial, max mo. temp. 65-75 °F, less than 1 percent grade
WR42	Perennial, max mo. temp. 65-75 °F, 1-3 percent grade
WR43	Perennial, max mo. temp. 65-75 °F, 3-6 percent grade
WR44	Perennial, max mo. temp. 65-75 °F, 6-12 percent grade
WR45	Perennial, max mo. temp. 65-75 °F, greater than12 percent grade
WR50	Perennial, max mo. mean temperature greater 75 °F
WR51	Perennial, max mo. temp. greater 75 °F, less than 1 percent grade
WR52	Perennial, max mo. temp. greater 75 °F, 1-3 percent grade
WR53	Perennial, max mo. temp. greater 75 °F, 3-6 percent grade
WR54	Perennial, max mo. temp. greater 75 °F, 6-12 percent grade
WR55	Perennial, max mo. temp. greater 75 °F, greater than 12 percent grade
WR90	Intermittent streams, rivers
WX	Water-covered areas (no association specified), Resource Inventory

Hall, Frederick C. 1998. Pacific Northwest ecoclass codes for seral and potential natural communities. Gen. Tech. Rep. PNW-GTR-418. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 290 p. In cooperation with: Pacific Northwest Region.

Lists codes for identification of potential natural communities (plant association, habitat types), their seral status, and vegetation structure in and around the Pacific Northwest. Codes are a six-digit alphanumeric system using the first letter of tree species, life-form, seral status, and structure so that most codes can be directly interpreted. Seven appendices list various groupings of codes, a synonymy with plants listing, and a complete list with descriptions of all codes with references to publications.

Keywords: Plant association, seral, structure, potential natural community, Pacific Northwest.

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